THE

Medical and Physical Journal.

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History of the Inoculation for the Cow-pox.

[Continued from page 120 of our last.]

THE annexed plate requires no other explanation than what is contained in the relation of the case which refers to it; page 118 to 120 of No. II.

As we had wished to lay before the public an impartial unadorned case of cow-pox, just as it might impress an anxious and attentive parent, and just as described by him from notes made during its daily progress, we think ourselves peculiarly happy in having all the desiderata united in one individual instance. The plain and simple description and relation of a person unconnected with the profession of medicine, must be far more satisfactory to the public, than any case selected for the occasion by a practitioner, who might wish to recommend the new inoculation.

The appearance and degree of severity of the cow-pox when produced by inoculation, agrees with Mr. WALKER's account in about 97 cases in 100, of those inoculated in London and its neighbourhood. In a very few instances, however, during the last six weeks, an *eruption* has taken place over the whole body, which, by a cursory observer, might have been mistaken for the small-pox. We have seen some of these cases; the *first* of which was inoculated with matter taken from the cow; the *second* with matter taken from the first. Each of these children had a numerous eruption, but were in no danger. The *third* and *fourth* were inoculated with matter taken from the second, and had an eruption, but much slighter than the first or second. If it ever should become a question, which is not improbable, whether the cow-pox, by repetition in the human subject, may not degenerate into the small-pox, it may then be necessary to point out the distinction which subsisted between the two diseases, when the former was first introduced as a preventative of the latter. At present we shall only add, that Dr. JENNER's second volume has been expected every day of the last week, and that a work on this subject by Dr. WOODVILLE, who appears to have inoculated a far greater number of patients than any other practitioner, will appear in the first week of May.

April 28. T. B.

A Case of the Diabetes Mellitus, which terminated in a complete and, as far as can be judged from apparent circumstances, a permanent Cure, by Medicines, abstracting Oxygen from the System, and a Diet consisting totally of Animal Matter.—By R. REDFEARN, *M.D. of Lynn Regis, Norfolk.*

AFTER perusing the first edition of Dr. ROLLO's publication on the Diabetes Mellitus, in two volumes octavo, printed by Dilly, Mr. SPERGING, a respectable farmer at Docking in this county, came to consult me, about the beginning of the year 1798, in a case of this disorder, which he had laboured under for near two years before that time. Previous to his application for advice to me, he had consulted Dr. M. of this town, and also Dr. L. of Norwich, both of them gentlemen of eminence in their profession, without experiencing the least alleviation of his complaint. Upon Mr. Spurging's applying to me, it instantly occurred to my mind, that the nature of his disorder would afford a fair opportunity of trying the method recommended by Dr. Rollo, for treating this obstinate and troublesome disease. I therefore immediately suggested to him the propriety, and the absolute necessity of abstaining rigidly from all fermented liquors and vegetables, with every thing else that could impart oxygen to the system by the primæ viæ; and at the same time ordered that his diet should consist principally of fat beef, pork, and such aliments as were of a gross or unctuous quality, and most likely to produce hydrogen in the greatest abundance. My patient, dejected by a long and painful affliction, and extremely anxious to recover, complied with every prescription, whether in a dietic or medicinal point of view, with the strictest care and attention, declaring that the most nauseous medicines could not shake his resolution from persevering in any course of physic or regimen, which might be adopted towards his recovery. Deeply affected by his sufferings, and desirous of contributing to his relief, I began with prescribing to him, when thirsty to drink very weak brandy and water, with ten or twelve drops of the hepatised ammonia, a bottle of which he was furnished with, prepared as directed by Mr. CRUICKSHANK, in Dr. Rollo's publication. This he was desired to augment gradually, as his stomach became habituated to its stimulus; and the following medicines administered:—

℞	Pulveris cinchonæ rub — —	unc. i.
	Aluminis usti — — —	drachm. [illegible]
	Kali preparati — — —	drachm. ij.
	Petrolei sulphurati — — —	q. s.

Misce,

Misce, fiat elect. de quo capiat nucis moschatæ molem ter in die, horis duabus ante et post prandium; et hora septimâ vespertinâ superbibat cyathum misturæ sequentis:—

℞ Aquæ calcis	—	—	—	unc. xvi.
Kali sulphurati	—	—	—	drachm. iii.

Fiat mistura.

℞ Natron præparati lenè calcinati		—	drachm. i.
Saponis albi Hispani	—	—	scrup. iv.
Mucilaginis gummi Arabici		—	q. s.

Misce, fiant pilulæ triginta, quarum capiat quatuor singulâ nocte.

It would be altogether superfluous, and perhaps impossible, to enumerate the various diagnostics concomitant on this disease, in different subjects. The most prominent symptoms, that attended my patient, I shall, however, briefly recount, viz. an intolerable thirst; parched skin; tongue whitish, and moist on its exterior surface, but reddish on the external edges; saliva white, frothy, and extremely viscid, so as to render exspuition very difficult; the profluvium urinæ limpid, and of a saccharine quality, and voided upon an average to the quantity of six or seven quarts in the course of twenty-four hours. The wasting of the muscular parts had been gradual from the very first commencement of the disease; and from a corpulent habit he was reduced to a state bordering upon emaciation.

After this patient had persevered in the above medicines and regimen during a fortnight only, he found his thirst by no means so excessive. The quantity of his urine was considerably diminished, and became also of a quality more urinous, and less sweet. His amendment continued to be progressive, without feeling any interruption, either from natural or adventitious causes; and he was completely free from every symptom of the disease in less than three months after the medicines were first administered. He never once deviated from the regimen prescribed; nor omitted taking his medicines regularly, although they were extremely unpleasant. The hepatised ammonia was increased to thirty or forty drops at a dose, without his experiencing any disagreeable effects from it, and he took of this article alone, nearly ten ounces.

My patient has now continued perfectly well for more than eight months, nor has he taken any medicines since, except half a pint of SCHWEPPE's double acidulated Soda water, occasionally prescribed, with a little brandy, by way of beverage: and although he has indulged several times in fermented liquor during that period, no relapse has ensued from such indul-

 gence;

gence; and to my enquiries, very lately, he declared, that he never enjoyed a better state of health than he does at this moment.

The kali sulphuratum, or sulphuret of pot-ash, should be carefully inspected by the faculty, when administered as a medicine; because, when recently prepared, it is extremely caustic by the disengagement of the carbonic acid from the pot-ash, during the process of preparing it. In this state, more moderate doses should be made use of; but when it has regained this aëriform elastic fluid, (the deprivation of which constituted its causticity,) as it frequently does in the dispensaries, by an exposure to the atmospheric air, or for want of proper caution in being secured from its contact; whenever this happens, I have always found its efficacy of little avail, either in the diabetes, or in the removal, or prevention of ptyalism excited by mercury.

LYNN, *April 5th*, 1799.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I SUBMIT to your consideration the following observations upon the discoveries of MAYOW; a subject, which has, lately, employed the pens, and attracted the attention, of different literary characters in this island, and on the continent.

I am, Gentlemen, your obedient servant,

RICHARD LUBBOCK.

Much and deserved praise is due to the zeal and exertions of Dr. BEDDOES, and Dr. YEATS, in their attempts to render justice to the writings and discoveries of Mayow, by calling the attention of the learned to the merits of this great philosopher, the KEPLER, perhaps the NEWTON, of chemical science.

It appears however to me, from the perusal of some contemporary and subsequent writers, found, chiefly, in a private and provincial collection of books, that the knowledge of Mayo's writings was, as much, and as generally, diffused over Europe, immediately upon, or very soon after their publication, as of any work of science ever published, in which the march and progress of the human mind was equally outstript, by equal depth of research or boldness of discovery; and the advocates of Mayow have, perhaps, been too rapid in their conclusions, in asserting, that contemporary writers received his works with an ungrateful silence, or ignorant insensibility.

In

In support of the early attention of the learned to Mayow's writings, it may be remarked, that the press at Oxford, in the course of a few years, sent forth two editions of some, if not of all his treatises; and that the 'Tractatus quinque,' were also very soon reprinted in Holland. It may also be observed, that MANGETUS was not insensible of the value of his writings, having, about the end of the last century, reprinted his treasises on Respiration, and on the Fœtus in utero, in his "*Bibliotheca Anatomica*," having quoted them, in terms of praise, in other parts of the same work.

It is with some surprise that I find Dr. Yeats giving it as his opinion, that MUNDY, in his work, printed at the same time with Mayow's "*De Aëre Vitali, &c.*" and also reprinted in Holland, in 1684, has not mentioned the name of Mayow, nor adopted his opinions; when at the end of the seventh chapter, "*De Atmospheræ pondere, et Aëris elatere,*" he is quoted in the following terms: "Alioquin (inquit D. J. Mayow, qui de his rebus ingeniose commentatus est) nulla omnino foret hominum, imo ne animalium quidem societas; quippe opporteret, ut singuli et separatim vitam degerent, quo, viz. spiritus aëris penus ad vitam sustinendam bis amplus, cuique suppeteret."—The other parts of the same chapter amply prove, that Mundy embraced the opinions of Mayow, upon the nature of air. There was also printed at Oxford, in 1694, a work, entitled, "*Dissertationes Medico-Physicæ, de Antris Lethiferis, etc.*" by Dr. CONNOR, in which the name of Mayow is duly quoted, and the general reception, which his doctrine had met with, is candidly acknowledged, and in the following words, "Objicietur procul dubio, quod in Antris feralibus, animantia et faces nullatenus ex aëris, sed ex nitri aëris defectu expirant.—Receptissima enim est ubique gentium opinio de nitri aëris efficacia; qua contenditur post Cl. D. Mayow, quod aëris nitrum in sanguienum introducitur per pulmones;" and after some similar observations, Dr. Connor concludes, "et arrogantiæ reus viderer, si solus ego tot præclaros viros, qui hanc opinionem utrisque ulnis amplexi sunt, et foverunt, a veritatis tramite deviasse assererem."

In 1694, Dr. Coward also published his work, "De Fermento volatili nutritio," in which Mayow's work is referred to more than once; and to the above names, I cannot forbear adding, (with Dr. Yeats,) that of the excellent Collins, whose anatomy was printed in 1685. Thus it appears, that Mayow's Discoveries attracted, and in no small degree, the attention of contemporary writers in this kingdom.

Nor were they less known on the Continent; for Peyer, in his "Parerga omica et medica," (Amsterdam, 1682,) quotes and approves of Mayow's ions; and in 1692, he is quoted, in a very ingenious work, published at

at Geneva, "De prima coctione et fermento ventriculi," by Viridetus—and Etmuller examines his opinions, largely, in the edition of his works, printed 1697, in his Treatise on Respiration; and it must not be forgotten, that about, or soon after this period, Mayow's opinions were referred to by some of the first philosophers and medical characters of the age. It will be sufficient to say, that John Bernouilli quotes Mayou, in his dissertation, "De motu mosculari, et de fermentatione,"—that the learned Pitcairn quotes him, in his "Opuscula medica;" that Morgagni notices his opinions, in his "Adversaria;" and that Bianchi, in his orations, at the end of his 'Historia hepatica,' mentions him, among other discoveries in his physiology. But I must conclude, by remarking, that Mayow's opinions are frequently cited in the "Exercitationes medicæ," printed at London, in 1724, by John Tabor, and who has mentioned his works in the following manner; Mirifici hujus salis præconia, a nullo vel plenius, vel magis ex professo celebrantur, quam a nostrate Mayow; e cujus scriptis tanquam e promptuario, haud pouca argumenta fuere desumpta, nitro aëreo plurimum referta; quæ, in ostendendis aëris muneribus ad ignis accensionem, vegetabilium productionem, atque ad animalium motus omnes vitales edendos, totam rem confecisse credita sunt."

It must be here admitted, that the fore-mentioned authors have quoted Mayow, for the most part, on physiological subjects, such as on the function of the stomach, and of the lungs, and upon muscular motion; and that some of them must be considered solely as friendly to the extension of his name, and not as advocates for the truth of his doctrines. And the reason that his chemical philosophy has been less noticed, is, that the opinions of Stahl were very soon made public, appealing, for their support, to a warm imagination, rather than exercising the judgment by the labour of induction, or accurate investigation.

Norwich, *April* 16th,
1799.

To the Editors of the Medical and Physical Journal.

Gentlemen,

IN the second Number of the Medical Journal, you direct the attention of your readers to the important subject of epilepsy. This dreadful disorder, though not absolutely incurable, so frequently resists the best approved medicines that every practitioner must think himself fully justified in attempting to introduce any new plan of cure, which may present a rational prospect of success. During my residence at Edinburgh, I had an opportunity [illegible] the *nitrat of silver* used with very considerable advantage, which appe[illegible] the

the more striking, as contrasted with the total failure of the *cuprum ammoniacum*, a medicine whose credit rests upon the very respectable authority of Cullen. In October last, my friend Dr. Cappe, of York, who honoured me with a visit in Liverpool, gave me an account of his success in the use of the *argentum nitratum*, as detailed in p. 184, of your second Number. These circumstances determined me to give it a trial in the first fair instance which should occur: only one case has hitherto presented itself; but in this the *nitrat of silver* has proved of such singular utility, that though but a *single case*, I have been induced to offer it for admission into your Journal. The following account is extracted partly from the Dispensary books, and partly from notes which I took at the time.

March 8.—Owen Hughes, a boy aged 11, who works with a shoe-maker, of a pale complexion, and generally unhealthy appearance, offered at our dispensary. About two months before he had been seized with the epilepsy; at first, one fit only occurred in the day; the disorder however gradually increased in frequency and violence, till on the 8th of March (the day that I first saw him) he had four, and on the 9th, five pretty severe fits. On the 9th he began the use of the *argentum nitratum*; gr. ij. of it were made into forty pills, and he was ordered to take four of these pills, at two doses (i. e. one fifth of a grain), in the course of the day.

March 15.—He had one fit on the 10th, but none since; he feels a slight sensation of heat in the stomach, after taking the pills; his appetite appears rather impaired. He was ordered to continue the pills as before, but to drink lb. ss. of any fluid after each dose: he was also directed to take scrup. i. of Peruvian bark twice in the day.

March 22.—He has had during the last week, three fits; his general health is as before: he now feels no uneasiness after taking the pills. He has had no warning of the approach of the three last fits; formerly he had a slight previous vertigo. I now ordered him to take three pills in the morning, and two in the afternoon, drinking after each dose. The bark to be continued as before.

March 26.—He has had no more fits; the appetite is now improving. The medicines were ordered to be continued in the same manner.

April 2.—He has had no return of fits. His appetite and general health are now completely established; he has worked at his trade for ten days, without inconvenience. The bowels have not been in the least affected by the medicine; during the illness, the pulse was little different from the healthy state; and the other functions were in general little affected.

I shall

I shall, indeed, feel gratified, should this case be in any degree the means of bringing into notice, a substance which may prove an efficacious remedy for a disease so dreadful in its appearance, and so injurious to the constitution, as epilepsy. Believe me, Gentlemen,

Your obedient servant,

LIVERPOOL, *April* 15, 1799. JOHN BOSTOCK.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

PERHAPS the following case of monstrosity may not be unworthy a page in your Physical Journal, nor unacceptable to its numerous readers.

About a fortnight ago, I was called to a woman who was delivered of a female child, full-grown, and, to all appearance, well formed in every part, excepting the head, and there was a deformity very remarkable:—Both parietal bones were entirely wanting, and the whole of the frontal bone, except its orbitar processes, and that part which forms the nasal process: the upper part of the squamous portion of the temporal bone (on both sides) was wanting, but the mastoid and zygomatic processes could be distinctly traced, and the meatus auditorius externus seemed to be perfect; as much of the occipital bone as is extended to rather beyond the crucial ridge was present, and the whole length of the upper edge was turned remarkably outward; the integuments on the os occipitis were, from the upper part of the neck, folded up in great quantity, and terminated by dipping down under the edge of the occipital bone, where the hairs were very numerous. As to the brain, there appeared but little, not more in quantity than the half of a common sized orange, which was unequally divided by a longitudinal fissure: I would rather substitute the word excrescence for brain, for certainly the appearance had not much the character of the latter—no dura mater existed, and I believe, no pia mater (at least, none on the surface; nor, in fact, could this be expected, there being no longitudinal sinus into which the vessels could empty themselves, nor was there any appearance of vessels). Pressure on this excrescence seemed to produce no effect; but on this I would not rest, as it certainly could not, in justice, be carried to an extent sufficient to give a decided opinion. The covering seemed only a common cuticle, which was, the day after the birth, abraded in several parts. The child lived about thirty hours, making continually a moaning noise, and breathing with extreme difficulty; at intervals it was seized with a general spasm, in

which

which state it remained, to appearance dead, for above a minute, when it revived by sudden and repeated gasps. In such a spasm it was carried off. The child took a little nourishment more than once, swallowing with much difficulty, which was heightened by the want of the palate. Neither urine nor fæces were evacuated. I much lament that I was not able to preserve this curious phenomenon: I endeavoured by various means to pursuade its friends to resign it, but their low prejudices resisted every application.

I am, Gentlemen, your's respectfully,

St. Thomas's Hospital, April 16, 1799. JOHN PULLEY.

Agreeably to the promise given in the last Number of this Journal, p. 214, we proceed to present our Readers with an Analysis of Dr. JACKSON'S *interesting work on Idiopathic Fever, or* "*An Outline of the History and Cure of Fever, endemic and contagious,*" &c. 8vo. 7s. Longman, 1798.

FROM the first dawnings of medical science, idiopathic fever has engaged the uniform attention of authors and practitioners. The importance of the disease sufficiently explains and justifies this circumstance. We might therefore, at this day, naturally conclude, that no subject connected with the practice of physic, would be so well understood as that of fever. The reverse of this, unfortunately, may be considered as the fact. Among other important causes of the deficiency of our knowledge on this subject, may be enumerated, the local situation of the most celebrated medical authors. Fever is the natural product of hot climates; whereas, the principal, if not the only authors of medical sects and systems, have till lately, been limited to the temperate or cold regions of the northern hemisphere. Commercial advantages, and the wars undertaken to extend and protect them, have, within the last twenty years, afforded opportunities to men of abilities and observation, of comparing the symptoms and progress of the same diseases, under the most diversified circumstances. This comparison has been productive of new facts, and new views of the subject, and thence of many considerable practical improvements. Whenever an important branch of science, which has continued stationary in the hands of the most celebrated teachers for two or three hundred years, is attempted to be materially improved, the success will very much depend upon the manner in which, and by whom the improvements are introduced. To succeed rapidly against colleges and established professors, it is necessary that the innovator should have all the personal advantages of education and talents, and all the pro-

fessional ones of experience, united to a happy facility of explaining the new, without a supercilious contempt for the old opinions. Such a character is Dr. Jackson, It would, however, be great injustice to several of his cotemporaries, to insinuate that he is the only labourer in this vineyard.— ROBERTSON, TROTTER, CURRIE, and others of our own country, not to mention several in America and the East-Indies, have contributed greatly to the same end. It will be unnecessary for us to mention the diligence, the talents for observation and description, the preparatory education, or means of information, which Dr. Jackson possessed: these will appear from his works. In the advertisement prefixed to the present volume, Dr. Jackson informs his readers, that he went out to Jamaica in 1774.

" Among the diseases of that country, *fever* was the one which presented itself the most frequently; as the most frequent, it seemed also to be the most important, and consequently occupied my chief attention. With the information acquired in this situation, and some dawnings of science in my mind, I went to North-America, in 1778, partly with a view of prosecuting the study of fevers in a new country, partly with the view of witnessing military service. Soon after my arrival in America, I was attached to the late 71st regiment; and in various services of that corps had the opportunity of observing very extensively, the different forms, and different degrees of fever, in the southern states of the American continent. I followed in this country the rule which I had observed in Jamaica, of writing down histories, and of arranging facts, at certain intervals. The result of this experience was given to the public in the year 1791.

" The views which I had obtained of fevers, by the mode of observation mentioned above, appeared in some respects different from the views of the medical writers, or practitioners with whom I had any acquaintance; but still something remained, which seemed to require confirmation. Under this impression I offered service in the commencement of the present war, and was placed us surgeon to the third regiment of foot, or buffs, at that time embarked for the West-Indies. The destination of this corps was changed on the eve of sailing: a circumstance which I then considered as a great disappointment; but as by these means an opportunity was furnished me of extending my views to the subject of *contagious fever*, the event has turned out to be fortunate—to myself, at least, it is satisfactory.

" In the year 1795, I was ordered to the West-Indies, to the island of St. Domingo: where the duty assigned to me, afforded the means of examining the appearance of things at different parts, and in different districts, more fully than happened to any other person on the medical staff of that island. My former rule of conducting observations was adopted on this recent service; and the result, without reference to former observations or opinions, is now offered to the public, arranged after as clear an order as I have been capable of devising.

" The investigation of truth, as it concerns the health of man, has been the leading pursuit of my life; and this, perhaps, is my last offering to the public on the subject. I am aware that several of the opinions advanced here are heterodox! I am even aware that the manner in which they are sometimes brought forward, will be thought abrupt, if

if not presumptuous; but if true, they may in time emerge in useful application: if otherwise, their progress, and consequent injury, will be small, for they do not enter the world under the patronage of a great name.

"ROBERT JACKSON."

We have given considerable extracts from this advertisement, that the public may judge for themselves, what may be expected from such a writer who has enjoyed such opportunities for observation and experience. It ought to be observed in this place, that Dr. ROBERTSON enjoyed similar opportunities*; and, as he also appears to have devoted himself to the subject for many years, and is no less determined to adopt nothing but what was supported by his own observation†, our readers will doubtles be pleased with a few occasional comparisons between the opinion of these two authors.

Dr. Jackson has divided his work into two parts; the first of which contains his opinions and observations on fever: the second may be considered as an appendix, on the principles of military disciplines &c. which does not occupy more that fifty pages. The first part is introduced by a short history of the origin and progress of contagious fever as it appeared in different divisions of the British army in Holland, Ireland and England, during part of the year 1793, the years 1794, 1795, and part of 1796. The first chapter Dr. Jackson commences with details of the situation of the troops, and the prevailing diseases while in the channel and at Jersey. These details are interspersed with several valuable observations on the introduction of contagion into regiments and ships; with the means of preventing its spreading. We are next carried with the troops into Holland, where the various symptoms which presented themselves among the sick, are always described in pointed and impressive terms. In September, on the right bank of the Maese, where upwards of sixty men were attacked with fever within the space of twenty-four hours, he says,

"The symptoms of the complaint were violent in the commencement; the head-ach attacked suddenly, and severely distressed the patient: the eyes were often hot, painful and turgid; the countenance flushed, cloudy and grim; the limbs ached grievously, similar to the achings in the cold stage of intermittents, or accompanied with sensations of gnawing and tearing, more particularly along the shoulders and arms; the skin was generally dry, tender of the touch, or did not bear a pressure without pain; the heat

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* See an Essay on Fevers, wherein their theoretic genera, species, and various denominations, are from observation and experience for thirty years, in Europe, Africa, and America, and on the intermediate seas, reduced under their characteristic genus *Febrile infection*, and the cure established on philosophical induction. By ROBERT ROBERTSON, M.D. 8vo. Robinson, 1790

† See pages 3, 86, 168, &c.

heat was often ardent, and sometimes pungent; the pulse was insidious, sometimes agitated and irregular, sometimes apparently little disordered in point of time, but seldom energetic, elastic, and expanding; the tongue was usually *white and slimy*; to which was often added nausea and sometimes vomiting; thirst was irregular, rest was altogether wanting, or the sleep was disturbed by dreams; the state of the bowels was uncertain; costiveness prevailed, or purging approached to dysentery: in many instances, there were convulsive or spasmodic motions of the moving powers; tremors, startings, affections of the organs of respiration, alternating with affections of the head. This disease did not terminate in regular intermissions, but it was disposed to subside in three or five days, it seldom extended to seven. It often terminated fatally in form of dysentery, or in local disease of an organ."—p. 13.

After the troops were withdrawn from the continent, in May, 1795, the attention of Government seems to have been directed towards the French islands in the West-Indies. With this view, two expeditions were formed: the one directed against the Caribean islands; the other, destined for St. Domingo, assembled at the Cove of Cork, and was chiefly composed of drafts from newly raised regiments serving in Ireland. In this the author occupied a situation on the medical staff. To prevent desertion and irregularity among the troops, which appeared in September, an encampment was formed on the island of Spike, an unsheltered island in the harbour of Cove. There the seeds of fever sprung up, and by the time the troops were all embarked, the disease was aggravated to an uncommon degree of virulence.

"From the middle of October to the middle of February, not fewer than 500 men (out of 9000) were numbered with the dead; during which period, not fewer than 8000 had been mustered on the list of sick. The causes are obvious, and similar to those which produced such ravages on the continent, viz. the seeds of infection, incautiously introduced into the army by the recruits of independent companies, called into activity by a variety of causes, concentrated and exalted into a degree of pestilential virulence, by accumulation in a narrow space."—p. 35.

Dr. Jackson, after stating the various symptoms that occurred in the different degrees of fevers which harrassed these forces, adds,

"The sickness which prevailed among the troops assembled at the Cove of Cork, for the reinforcement of St. Domingo, furnishes an extensive field of observation on the nature of the contagious fever of armies. The operation of the cause manifested itself in a great variety of forms. It was evidently connected with *sores and spreading ulcers of the legs*, and more evidently still, with diarrhœa, with dysentery, or severe gripings and bloody evacuations; the irregular forms, and slighter [illegible] of fever, were numerous; the violent and threatening, occurred daily; and the concentrated, suspending life, as it were, by a direct operation, appeared on different occasions. While the troops were on shore under tents, in wet and stormy weather, the prevailing form was dysenteric; it often became febrile under a roof—or on board the small vessels employed as hospitals; it generally became febrile after embarkation. It may

may be further remarked, that the form soon became febrile, violent and concentrated, in the crouded hospitals of the fort; that the mortality was great, and that life there seemed often to be suffocated or arrested without struggle or resistance. In the barns; hovels, and sheds, the appearance were more irregular, and the symptoms were more threatening, but the mortality was comparatively small, and recoveries were frequently rapid. On board of transports, where the patients remained below during the greatest part of the time, the disease was violent, concentrated, and speedily fatal: where brought on deck, and remaining on deck during the day, the effects were similar to those in the sheds on shore. Under confinement between decks the disease seemed to retain its full power of contagion: under exposure to the air on deck, this power was evidently weakened; and where to this exposure were joined daily washing of the body and purifying of the bedding, it was so far weakened, that its existence by the time of arrival in the West-Indies, was in many cases doubtful. This disease follows a law essentially different from the *periodical movements* of endemic fevers.

Dr. Jackson next proceeds to examine more minutely, the means by which contagion is brought into and propagated among armies and navies. His observations on this subject, appear highly important, but we think more particularly directed to the Commander in Chief, than to the medical board.

The troops being arrived in St. Domingo, the author employs his second chapter in delineating the situations, soils, aspects, winds, and elevations of the stations, occupied by the British troops, together with their effect on the health or modification of the disease. As these particulars can be only interesting to persons going to the island, who will doubtless consult the work itself, we shall give few extracts from this part. By a comparison of the endemic fever which occurred in various situations of St. Domingo, with the contagious fever of Europe, the author draws the following inferences. The endemic disease of all the West-India islands, is fever, diarrhœa, sore legs, or spreading ulcers of a peculiar kind. These complaints moreover appear so connected with each other, as to afford a presumption that they depend fundamentally upon the same general cause, differing in degree of force, or differently modified according to circumstances of season, place, and situation. The connection alluded to is obvious in the endemic, and a similar connection is observable under the action of the contagion of jails, hospitals, crouded barracks, and crouded ships.

It appears from a perusal of their histories, that nearly all the islands of the West-Indies are under similar laws, with regard to health. In towns and places near the sea-coasts, European soldiers sicken and die; in the mountainous and interior parts of the country, health suffers little, and mortality is inconsiderable. The subsequent observations in this chapter being of a political nature, we pass them over.

The

The author deriving his information from sources such as we have stated, advances from the numeration of facts, to the formation of doctrines; and, in his third chapter, enters upon the CAUSES of Idiopathic fever. This part of the subject is so important, and as it forms the basis of his two-fold distinction of fevers, viz. endemic and contagious, we conclude that our readers would be much disappointed, if we did not lay before them the author's reasoning upon it.

T. B.

(To be continued in our next.)

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

IN laying before the public a case, which very accidently fell into my hands, and in which the cow-pox was said not to have proved a preservative from the contagion of the small-pox, I had no intention of declaring myself an enemy to the inoculation of this disease; my only wish was, to induce practitioners to pause a little, to obtain more decided experience of its utility, before it should be *generally* recommended. It did not appear to me, that a sufficient number of trials had been then made, nor is the certainty that the having suffered the vaccine disease, will prove a preservative from the infection of the small-pox, as yet, less problematical than before. Much more experience is ſtill wanting to warrant the *general* adoption of the measure. I may then, I hope, be permitted to make a few observations in explanation of what I have said in the first Number of the Medical Journal, without being supposed to engage in any controversy. This is the more necessary, as a very sensible correspondent, Mr. Laurence, seems to have misunderstood, as well as to have misquoted my words. It was far from my intention to assert, that "all hazardous experiments ought to be discouraged." I only intimate, that such rash experiments, as the venturing to insert a variety of acrid animal poisons, by inoculation, into the human conſtitution, ought to be discouraged. In saying this, I certainly did not mean to throw any blame upon Dr. Jenner, for inoculating with the matter of the cow-pox. It was a received opinion in the country, that the having suffered this disease, was a preservative from the contagion of the human small-pox, and from suitable enquiries made, Dr. Jenner found reason to believe the fact. Now although all new experiments may be said to be in some degree hazardous, I am far from thinking that this, instituted with a view to determine whether the inoculated disease would have the same effect, was one that ought not to have been made. On the contrary, I think every praise is due to Dr. Jenner

for bringing it to the fairest of experiment, and laying it before the public in the handsome manner he has done. Here was an object certainly worthy of the hazard that was to be run; but when Dr. Jenner, from having adopted the improbable opinion, that the disease owed its origin to the grease in horses, ventured to inoculate with the matter of a putrid sore, with a view of determining if this also had the power of preserving from the contagion of the small-pox, he was, I think, entering upon the field of rash experiment. No immediate benefit was likely to accrue from such a trial. It was indeed an inquiry of pathological curiosity; and had repeated experiments upon the cows already evinced, that this matter was capable of producing the disease upon the brute animal, I do not mean to say, that even this experiment with due circumspection, and a proper sense of the hazard attending it, was in no case to have been made. But when I learn, that this and similar experiments are making, in all the variety of modes, by different persons, without any apparent fear of the possibility of doing any mischief, it seems to me to be high time that the public should know, that such experiments may not only be attended with eminent hazard to the immediate subject of them, but that there is, at least a *possibility*, that an infectious disorder may thus be created. That the inoculation of some animal juices, in a certain state of corruption, is capable of producing very dangerous disease in the individual, is too well known, from the accidents that have happened in prosecuting anatomical researches. That a disease of a contagious nature can be thus excited, I do not assert, but if the thing be not in itself *absolutely impossible*, the greatest caution ought certainly to be used in instituting experiments from which there is only a distant *possibility* of such a deplorable mischief. For the sake of illustration, let us suppose, that a writer upon the cow-pox starts the hypothesis, that a certain febrile state is excited in the system by the absorption of the matter of the cow-pox, which, though not the same with the variolus fever, has nevertheless such an analogy with it, that whoever has undergone this particular fever, will have the constitution so changed by it, that he shall be no longer liable to be affected by the contagion of the small-pox;—another, wishing to bring this to the test of experiment, and expecting to throw light upon the pathology of the disease, inoculates several persons with the matter of the pox of swine, or any other eruptive disorder affecting animals, of any description, merely to try if the fever excited by this matter will have the same effect, of enabling the constitution, ever after, to resist the contagion of the small-pox; I should not hesitate to pronounce such to be a rash and hazardous experiment, not free from the *possible* danger of producing new disease.

The history of medicine informs us, that several diseases have arisen in the world, which were before unknown. The origin of these is certainly involved

involved in great obscurity, but, as Dr. PEARSON observes, it has been often conjectured, that many of them are derived from brutes. Dr. GIRTANNER, in his very elaborate history of the syphilis, supposes this disease to owe its existence to the poison of a venomous insect, made use of by the natives of South-America, for a lascivious purpose. And Dr. JENNER is himself inclined to suspect, that the small-pox may have been derived from the vaccine disease; perhaps he will consider the change which this disorder seems already to have undergone, in that it now frequently produces an eruption of pustules, in some cases not to be distinguished from the human small-pox, as a confirmation of this hypothesis. Indeed, if there has been no error* in the performing some of the operations, it should seem as if the two diseases are so nearly allied, that the one cannot be distinguished from the other. In one case that fell under my own observation, the disease produced by the inoculation for the cow-pox was accompanied by an universal eruption of pustules, which, neither from their appearance, the accompanying fever, the time of the eruption, nor the period of their duration, could be any ways distinguished from the distinct small-pox, yet this patient was inoculated under the care of a physician, who has been very laudably employed in collecting such a mass of evidence, as must soon prove what advantage can be expected from substituting the cow-pox for the small-pox), with matter, as I was assured, taken by this gentleman himself, upon the point of a new lancet, from the arm of a child that had been previously inoculated with matter taken immediately from the cow.

If the same care was taken to use a new lancet for this first inoculation there does not appear to be any other source of error, and as far as one case can be a proof, Dr. Jenner's suspicion of the origin of the small-pox, appears

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* In these cases, where an eruption of pustules not to be distinguished from the small-pox has been produced, it is difficult to avoid suspecting, that for want of due care, the same lancet may have been used for inoculating for the two diseases; by which means the small-pox may have been communicated, where the cow-pox was intended. Perhaps no ordinary washing will effectually deprive the lancet of the variolous infection. Many accidents have been said to happen of unintentional communication of the small-pox, by letting blood with a lancet which had been long before used for the purpose of inoculation. Some time since, my father having inoculated a patient, and washed his lancet in warm water, was wiping it dry, when the patient accidentally received a slight wound in the finger. This wound was evidently infected with the poison, and went on in the same manner as the incision of the arm.

appears to be well founded*, as in this instance, where two persons o[illegible] were inoculated in succession with the vaccine disease, a real small-pox, [illegible] disease in all its symptoms, its progrefs and termination, exactly similar to the human small-pox, is produced: of its infectious nature, indeed, I have no proof, although I have not the smallest doubt. Now let us suppose the human small-pox to be unknown in any country, where the vaccine disease prevails; a human subject is accidentally, or purposely, by way of experiment inoculated with the poison from the teats of the cow, and others in succession are inoculated from the transferred disease, till a real small-pox is created, how many thousands would have to deplore the dreadful catastrophe of this unfortunate experiment. Who shall say that if similar experiments were to be made with the poison of the pox of swine, or an eruptive disease of any other animal, a new contagious disorder might not be produced? But to hint at the possibility of such an event, is surely sufficient to prevent the undertaking of such rash and hazardous experiments.

April 20th, 1799. JOHN SIMS.

Diseases admitted as In and Out-Patients of the Physicians of the Westminster Hospital, from the 20th of March to the 20th of April, 1799.

	No. of Cases.		No. of Cases.
Fevers	4	Enterodynia	2
Amenorrhœa	8	Epilepsy	1
Anasarca	2	Erysipelas	1
Ascites	3	Hooping-cough	1
Asthenia	1	Hysteria	1
Asthma	3	Itch	6
Catarrh	1	Menorrhagia	1
Cholera	2	Phthisis	4
Convulsions	1	Paralysis	4
Cephalæa	1	Pleurisy	5
Cough	14	Quinsey	2
Diarrhœa	8	Rheumatism	12
Dysentery	3	Struma	1
Dyspepsia	4	Urticaria	1
Dysuria	1	Vomiting	1

* It is only meant that this case, if no error attaches, goes to prove the identity of the two diseases. Perhaps it may be thought more probable, that the vaccine disease is derived from the human, more especially as, in the brute, it appears to be a local disorder, affecting [illegible] animal at different times.

List of Diseases from the 20th of March to the 20th of April; being the Result of the public and private Practice of a Physician at the West End of the Town..

ACUTE DISEASES.	No. of Cases.
Catarrh	22
Acute Rheumatism	5
Pleuritic Stitches	3
Peritoneal Inflammation	1
Inflammatory Sore Throat	4
Speckly Sore Throat	2
Ophthalmia	7
Scarlatina	6
Measles	3
Small-pox	3
Malignant Fever	5
Slow Fever	6
Hectica	7
Child-bed, and Milk-fever	2
Acute Diseases of Infants	8
Tertian	1
CHRONIC DISEASES.	
Cough and Dyspnœa	79
Hæmoptoe and Phthisis	18
Chronic Rheumatism	12
Lumbago and Sciatica	5
Dropsy	9
Scrophula	5
Asthenia	21
Hysteria	3
Epilepsy	2
Chorea	2
Paralysis	6
Cephalæa	8
Epistaxis	1
Dyspepsia	10
Gastrodynia	5
Enterodynia	4
Diarrhœa	8
Colica Pictonum	2
Hæmorrhoids	3
Jaundice	2
Fluor albus	4
Chlorosis	8
Menorrhagia	3
Abortion	1
Worms	3
Tabes Mesenterica	3
Scirrhus	2
Itch and Prurigo	74
Lepra	1
Nettle-rash	1
Purpura	2
Gutta Rosea	3
Porrigo	2

The measles are at present declining: in one child, who had been previously affected with the hooping-cough, the rash was succeeded by numerous livid spots, diffused over almost the whole body, and resembling those of the purpura, or the petechiæ sine fibre, in their most dangerous form. No harm, however, ensued; and the complaint was removed in about eight days.

The scarlatina has, during this present month, become much milder, so that all the cases put down terminated early and favourably.

Inflammation of the eyes, next to catarrh, cough, and rheumatism, seems to have been the most general disease; it was very troublesome, and in many cases, of long duration. The same complaint occurred epidemically in the months of February, March, and April, of the last year.

It may not be amiss to observe, that the itch, which is usually rife in the spring season, has, during the last six weeks, taken a very wild range, and appeared in many respectable families, never before lia[illegible]on of such a visitor.

R. [illegible]

Account of Diseases in London, from the 20th of March to the 20th of April.

ACUTE DISEASES.	No. of Cases.
Typhus Gravior	3
Typhus Mitior	5
Peripneumonia	3
Peripneumonia Notha	5
Catarrh	4
Inflammatory Sore Throat	3
Ophthalmia	1
Acute Rheumatism	6
CHRONIC DISEASES.	
Cough	12
Dyspnœa	7
Cough and Dyspnœa	13
Hoarseness	4
Hæmoptoe	3
Phthisis Pulmonalis	10
Pleurodyne	4
Ascites	2
Anasarca	3
Cephalagia	10
Syncope	3
Vertigo	5
Epiftaxis	2
Menorrhagia difficilis	4
Amenorrhœa	7
Chlorosis	5

	No. of Cases.
Fluor albus	6
Enterodynia	5
Diarrhœa	9
Vomitus	3
Gastrodynia	4
Dyspepsia	10
Obstipatio	2
Hamorrhois	3
Prolapsus Ani	1
Dysuria	3
Herpes	4
Hysteria	3
Palpitation of the Heart	2
St. Vitus's Dance	2
Hypochondriasis	3
Chronic Rheumatism	14
PUERPERAL DISEASES.	
Dolores post partum	3
Menorrhagia lochialis	2
Low Fever	2
Mastrodynia	3
INFANTILE DISEASES.	
Aphthæ	4
Ophthalmia	3
Fever	2
Vermes	4

The unusually long continuance of cold weather, and the pretty constant course of the wind from the East, and North-East, have protracted the duration of many of the winter diseases. Cough, Dyspnœa, catarrh, and all the species of pneumonic affections, still continue to prevail very generally.

In several cases of phthisis pulmonalis, the symptoms have seemed to be aggravated by the state of the weather; and there has been a very rapid advance towards the fatal catastrophe.

Rheumatisms, both of the acute and chronic species, have been very frequent. In this disease, the degree of pain has been very considerable, and the recovery from the acute species of it uncommonly slow. Some patients who had recovered from acute rheumatism, previously to the commencement of the winter, and who during the first of the winter months, continued free from every symptom of the disease, have been much afflicted by the wandering pains of the chronic species, during the laft two months.

Inflammatory sore throats have been very frequent, and have been followed, especially in scrophulous habits, by a tenderness and enlargement of the parotid glands.

Practical

[P]ractical Remarks on the Diseases which occurred on board the Astrea, &c.—By STEWART HENDERSON.

(Continued from our last, p. 137—143.)

INTERMITTENT FEVER.

THIS may be said to be another variety of the endemic, in a milder degree, occasioned by the same cause, marsh-miasma, introduced in a small proportion into a constitution not disposed to be affected with morbid movements. The cases of this fever which occurred, happened in the healthy season of the year; they were mostly tertians. After an emetic and purgative had been given, the bark was ordered to be taken every hour during the intermission. On the approach of the cold fit, forty drops of antimonial wine, with twenty of tinct. opii. were administered; which lessened the violence, and shortened the duration of the paroxism. In some cases, I found it beneficial to give wine and powerful stimulants, so as to keep up and increase the action of the arterial system, beyond the usual period of the returning paroxysm; while the bark was given every hour without intermission, unless prevented by the patient being asleep: careful centinels were placed over the sick, and they were frequently visited in the night, by myself, or my assistants. Calomel, in small doses, was of benefit in some cases, where I conceived the disorder proceeded from visceral obstruction; while others required a change of air, of which they had the benefit, when removed to Port-Royal Hospital.

DYSENTERY.

This disease is not limited or peculiar to any climate; nor is there any natural cause known to produce it: if it were occasioned by any particular quality in the air, the natives, as well as seamen and soldiers, would be attacked with it; but we find this is not the case, for when the dysentery was raging in the British army at the Cape of Good Hope, where great numbers died, not one of the inhabitants were seized with it; nor is it a disease known among them. Whenever it becomes epidemic among the inhabitants of any country, it may always be traced to infection introduced; it being the constant attendant on camps, and the scourge of an army, more destructive than any other enemy. I therefore consider it an *artificial* disease, brought on by those unavoidable hardships to which soldiers and seamen are exposed. Cold and dampness, when the body is not sufficiently covered, by obstructing perspiration, and increasing the determination of the fluids to the intestines, sometimes combined with f[illegible] miasma, produce the whole phenomena of dysentery.

In

In the treatment of this disease, I generally began with an emet[ic of] ipecacuanha, with a grain of tart. antimon. Bleeding was never emplo[yed] unless the patient was of a strong plethoric habit, and the febrile sympto[ms] run high. Purges of salt, or rhubarb with calomel, were frequently repeated: at night, forty drops of antimonial wine, with twenty of tinct. opii. which promoted perspiration, and relieved the spasms, when the tenesmus was troublesome. Emollient injections with opium, and fomentations were of[ten used], when the pains were wandering; but when the pain became fixed in a part of the intestines, indicating inflammation, a large blister was instantly applied, which in every instance removed it; perspiration was kept up by repeated doses, either of preparations of antimony, or Dover's powder, assisted by warm diluents. In cases combined with the remittent symptoms, inducing great debility, accompanied with sanguinary discharges, bark and wine were given, with farinaceous vegetables for food, such as rice, sago, or tapioca; sometimes to ease pain, and procure a little rest, opium was given, but seldom without some medicine to determine its action to the surface.

A few cases occurred unattended with fever, violent gripings, or tenesmus; in these, mercurial purges and calomel, in small doses, were prescribed with success.

DIARRHŒA.

This disease generally arose from relaxation, brought on by eating unripe fruit, and committing other irregularities. It was easily removed by lenient purgatives, followed by astringents and tonics.

HEPATIC COMPLAINTS.

Having served in India with his Majesty's troops, during the campaign of 1782, 1783, and 1784, in the Carnatic and Southern provinces, I had frequent opportunities of seeing liver-complaints, a disease often occurring in every hot climate, though not always suspected or discovered, and sometimes confounded with complaints of the pleura or lungs. The cases which occurred on board the Astrea were brought on by violent exercise in the sun, joined to the abuse of spirits. The patients complained of pain in the side, with some difficulty in respiration; the pulse full and frequent, sometimes they felt a pain in the shoulder, and about the region of the liver, which last, when pressed, was attended with a catching and troublesome cough. Bleeding, calomel-purges, and a blister applied to the side, and sometimes mercury in small doses, were alternately resorted to, until health was perfectly restored.

In chronic cases, the patients did not complain of acute pain, but a dull, obtuse pain in the hepatic region; the countenance dejected, and the animal spirits greatly diminished; the eyes dull, but not yellow; the tongue [dry]; the stools [...], frequent, and sometimes mixed with mucus, as in dysentery;

ry; the appetite irregular, often voracious. In these cases, without preparation, I had recourse to mercury, either internally or by friction, which last I preferred. The good effect of this treatment became obvious from the favourable change of that dejected countenance, so characteristic of the complaint, for a more cheerful one: and from the energy being restored to the hepatic system, which we discovered by the secretions; the stools becoming more regular, and of a natural colour: their diet consist chiefly of small quantities of animal food, with the farinaceous vegeta

SPASMODIC AFFECTIONS.

Those affections were mostly confined to the abdominal viscera, and brought on by lying upon deck in the night. The patients complained of excruciating pain and stricture, commonly about the umbilical region, nausea, and sometimes vomiting. If fomentations did not cure the pain, a large blister was applied; calomel with jallap taken internally, and clysters thrown up, until stools were procured, which removed the complaint.

One case occurred where the spasms were general. A man of a weak, irritable constitution, after taking an antimonial emetic, which operated rather violently, was seized with coldness on the surface of the whole body; violent contraction of the lower extremities, extending to the muscles of the abdomen, diaphragm, and ribs; the muscles of the face and neck became violently convulsed and distorted; the eyes sunk, and no pulse any where to be felt; respiration hardly to be perceived; he lay for some minutes in this state, so that while the warm bath was getting ready, the bystanders, from his external appearance, concluded he was dead. Volatile and stimulating applications were used, together with frictions with hot cloths; injections of warm water and laudanum were thrown up; wine mulled with spices were given, until the heat of the body was restored, by persevering in these remedies. The disease at length yielded to this treatment; but he continued in a state of debility for some time, which rendered the administration of bark, cordials, and, at the same time, a nourishing diet useful and necessary.

SCURVY.

The four cases of scurvy which occurred, were those of men who were devoted to irregular habits, and had for some years manifested a predisposition to the disease. Every care was taken to prevent it, by a sufficient allowance of vegetable aliment, a deficiency of which only can produce the disease; and before we went on a cruise, I took care to provide for the remedy on board. Plenty of lemon or lime-juice was given on the first symptom of the disorder, joined to what vegetable diet the ship afforded.

(To be concluded in our next.)

Experiments and Observations on the acid Properties of the Yellow Oxyd of Tungsten.

(Communicated by a Correspondent.)

We are indebted, for our first accurate ideas of the nature of the metallic substance called tungsten, to Scheele, who affirmed that it consisted of a calcareous earth, united to a peculiar acid.

His first process for obtaining it was, by fusing one part of tungsten with four of carbonate of potass, and dissolving the melted mass in boiling water. This water holds in solution a salt, resulting from the union of the tungstic acid with the alkali made use of, which is decomposed on the addition of the sulphuric, nitric, or muriatic acids, which unite with the potass and precipitate the acid of tungsten in the form of a white powder. He afterwards proposed a second, which consisted in digesting the pulverized tungsten in diluted nitric acid, which dissolves the calcareous earth, and uncovers the acid of tungsten, which appears in the form of a yellow powder. After repeated edulcorations have freed the powder from any sensible portions of acid, it is taken up, by digesting with caustic volatile alkali, which completely dissolves it. On the addition of an acid, it is precipitated from this solution in the form of a white powder, as in the foregoing process, and this powder was, by Scheele, and afterwards by Bergman, called the pure acid of tungsten.

Wolfram, treated in the same manner, afforded also a white precipitate, which was shewn by Messrs. D'Elhuyart, to be the same with that obtained by Scheele, from tungsten. They proved likewise, by numerous and conclusive experiments, that this white substance was not the pure acid, but a triple salt, resulting from the union of the tungstic acid with the potass, and the acid employed in the precipitation. The yellow powder uncovered by digestion in nitric acid, was, according to the experiments of these gentlemen, the pure acid of tungsten.

In the following experiments of Vauquelin and Hecht, extracted from the journal *des Mines*, they have not only confirmed those of D'Elhuyart, but prosecuted their enquiries still further, and ascertained completely the nature of this metallic acid.

A mixture of three parts of nitrate of potass, with one of pulverized wolfram, was thrown into a red-hot crucible, and kept in a state of fusion for half an hour. The mass, poured out upon a plate of iron, was of a greenish colour, and on cooling, christallized at its surface in small needles. It was

dissolved in water, and deposited a brown insoluble matter, which consisted of the oxyds of iron and manganese. The filtered liquor was of a greenish colour, which it was deprived of by boiling, and then again deposited a brownish sediment.

1. On the addition of sulphuric acid to this liquor (which held the tungstate of potass in solution), a white precipitate was formed. The same phenomenon took place on the addition of the nitric, muriatic, acetous and oxalic acids.

2. On evaporating the liquor resulting from the precipitation of this white matter, a salt was obtained, composed of potass, the acid employed in the precipitation, and the acid of tungsten, which was rendered slightly soluble in water by the potass and acid employed. The solubility of this triple salt was, however, diminished by the further addition of acid.

3. In decomposing the tungstate of potass by the sulphuric acid, there remains in the liquor sulphate of potass, but scarce any acid of tungsten, if a considerable quantity of sulphuric acid has been employed.

4. On adding nitric acid to the solution of tungstate of potass, a salt is obtained from the supernatant liquor, in crystals resembling the scales of fish. This salt contains nitrate of potass *, which had not been decomposed, and a triple salt, composed of the tungstic and nitric acids, and potass: it is soluble in water, and with lime-water forms a white precipitate; it is not affected by the air; it has a sharp, metallic taste; during evaporation, it spreads over the sides of the vessel; when distilled with sulphuric acid, it affords nitric acid, and the retort contains sulphate and tungstate of potass. This residuum, dissolved in water, does not form a yellow powder by ebullition, notwithstanding the acidity of the liquor. It is necessary to separate the sulphate of potass by lixiviation, and boil the white residuum in a concentrated acid. The white salt then assumes a yellow colour, and it is only in this last state, that it is perfectly pure.

5. The acetous acid occasions also a slight precipitate, in the solution of the tungstate of potass, but there is a point at which this precipitate disappears, and does not re-appear, but on the addition of a greater quantity of acetous acid. This salt has at first a taste resembling that of acetite of lead; but it soon after produces a sensation sharp and styptic, resembling that of the metallic salts.

6. The phosphoric acid occasions only a slight precipitate, even when added in considerable quantity. It appears to form a salt extremely soluble.

7. When

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* Vauquelin substituted the nitrate of potass for the carbonat in these experiments, which is attended with some advantage in the decomposition of wolfram;

7. When the white salt is boiled in concentrated vitriolic acid, diluted with an equal quantity of water, it assumes a yellow colour, more or less deep: the same takes place with the nitric and muriatic acids. The liquor separated from the yellow precipitate affords, by evaporation, a salt com-[illegible]d of potass and the acid employed, with a small quantity of the white wa[illegible] remained dissolved.

[illegible] When boiled in acetous acid, it acquires a blue colour, which becomes [illegible]er on evaporation. The liquor when filtered is clear, but deposits, at [illegible] end of some days, a white powder, which becomes yellow, on boiling with the sulphuric acid. The blue powder loses its fine colour in a great degree by drying.

9. Boiling water is equally capable of dissolving the white salt; the clear liquor deposits, after some time, a white powder.

10. The oxygenated muriatic acid occasioned no precipitate in the solution of tungstate of potass. The white salt was not rendered yellow by it; but was dissolved on ebullition, and again deposited, on cooling, in the form of a white powder. It appears that this solution is effected by the water alone in which the oxygenated muriatic gas is dissolved.

11. Caustic potass and soda, as well as ammonia, completely dissolve this triple salt. It is an excellent mode of separating the silex, which always accompanies wolfram.

12. A plate of iron, in contact with the white salt, instantly produces a fine blue colour. On boiling it with small pieces of iron, and a little water, the colour is equally manifested: a small portion of the salt, is however dissolved, and the rest preserves only a greyish blue colour.

13. The yellow acid of tungsten, although carefully edulcorated, retains always a small portion of the acid employed in separating it from the potass. It may be entirely deprived of it, by subjecting it to a red heat in a crucible for some time; and it is not till after it has undergone this last operation that it is in a state of perfect purity.

These experiments serves to confirm those of D'Elhuyart, who had already advanced, that the tungstic acid of Scheele, or the white powder precipitated by means of an acid, was a triple salt, composed of potass, acid of tungsten, and the acid employed in the process; and that the yellow powder produced by decomposing tungsten, or wolfram, by means of the nitric, or muriatic acid, after the second manner described by Scheele, was the pure acid of tungsten. From the experiments of Vauquelin, however, it appears, that simple edulcoration is not sufficient to free the yellow powder from any admixture of acid, a small portion of which it obstinately retains, and on which its acid properties depend. When freed, in the manner before directed, from all remaining portions of acid, it presented the following properties:—

1. Exposed

1. Exposed to the blow pipe, in a platina spoon, it assumed a deep green colour: on charcoal it became almost black.

2. It dissolved in borax, without altering either the colour or transparency of the globules, even when in considerable quantity.—When a very large proportion, however, was employed, it communicated a black, or deep blue colour to it.

3. The ammoniacal phosphat of soda completely dissolved it, and formed a globule of a deep blue colour.

4. When calcined a long time, with access of air, its yellow colour becomes deeper, and passes sometimes to a green. On heating it during several hours in a covered crucible, it assumed a greyish black colour.

5. When thus calcined, it has no taste. It is not soluble in water, and very triflingly so in acids. On triturating it with water, it remains suspended for a long time, and forms a kind of yellowish emulsion, which does not redden blue vegetable colours. It does not change colour either by exposure to the sun or to humidity.

6. It was boiled in concentrated nitric acid, and evaporated to dryness: no red vapours were formed. After having repeated this process six times successively, it was exposed to a red heat for some time, and found to have undergone no change during the operation: it had the same colour, and afforded no signs of acidity.

It is evident from these experiments, that the substance formed by the combination of tungsten with oxygen, does not possess those properties which at the present day are ascribed to acids, since it is insoluble in water, does not alter blue vegetable colours, and has no sensible taste. It possesses, in common with acids, the power of combining with earths, alkalis, and the metals;—but are these characters sufficient to authorize us to place it in the same class?

From these considerations it appears necessary to exclude this substance from the number of metallic acids, and rank it amongst the oxyds, or if we must still consider it as an acid, we shall be obliged to regard as such the oxyds of zinc, tin, antimony, and arsenic, which like it unite with alkalis, earths, and some other metallic oxyds, with which they form a species of neutral salts. If Scheele, who first made known this substance, has regarded it as an acid, it is because he never obtained it but in a state of triple combination; which exhibits indeed acid properties, because it constantly retains a portion of the acid employed in the precipitation, which is proved by the experiments of D'Elhuyart, as well as the foregoing.

This substance, therefore, known till now under the name of acid of tungsten, ought no longer to be considered as such, but as an oxyd of tungsten, and referred to the class of metallic oxyds, to which it evidently belongs.

To

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

AN important error has been discovered in part of the MS. of the "*West Country Contributions*;" and I should be much obliged to you to inform the possessors of that work, that at p. 381, l. 9, they should read "*three grains*," instead of "*nine grains*."

I am, Gentlemen, your's, &c.

THOMAS BEDDOES.

Memoirs on the Odours which are exhaled from the Body, considered as symptoms of health and disease:---*By* C. BRIEUDE.

(Extracted from the 'Recueil periodique de la Societé de Médècine de Paris,' No. XXIX. Vol. V.)

DAILY experience proves the importance of the olfactory sensations, and the necessity of analysing them. The bad smells, which often afford indications to the physician, are most difficult to be described, and distinguished accurately. In the same case where the relative chain of ideas would be entirely formed by habit, the difficulty of expression would present a new obstacle; and in fact, both ancient and modern languages are defective in terms to express the different modifications of the olfactory perceptions; a certain proof, that notwithstanding the number and frequency of these perceptions, a nomenclature of them has never been attempted.

The author has not treated the question of odours in its full extent, but confined himself to those which in man depend upon age, sex, profession, climate, diseases, certain secretions, excretions, &c.

In children the predominance of acid smell is sufficiently perceptible; it exhales from the crusta lactea *(croûtes)*, their sweat, and most of their excrementitious evacuations: when it changes and approaches to an alkaline tendency, it indicates a disposition to sickness, as practitioners and nurses know by experience. Several circumstances may then produce a different modification of that smell peculiar to childhood.

In adults a strong smell of a marked kind may be considered as a type, and taking the name of male odour. Luxury, and an excessive attention to the person, may disguise it, without destroying it. This smell is neither insupportable nor disagreeable to women who know how to estimate it; and often produces in them, by the association of ideas, grief, desire, hope, &c.

In

In respect of climate, light, and the action of caloric, increase the smell of human beings, as well as of the other productions of human nature.

Aliment will, in like manner, influençe the smell exhaling from man; and the opposite mode of living beween the inhabitants of Quercy, and those of Upper Auvergne, has, in respect of smell, effects as different as the causes producing them.

Spirituous liquors, vegetable or animal diet, equally vary the smells which we exhale, and communicate to each individual a peculiar atmosphere.

The smell of old age is similar to that of childhood: it becomes insipid and sweetish in the cells of monks, in hospitals, and prisons.

The professions which produce particular smells, are those of butchers, tanners, candlemakers, and sizers of paper.

These observations on smell are insufficient for the physician. It is also necessary for him to attend to all those which depend on certain local dispositions, or diseases; febrile patients, phthisical persons, and women after child-birth, and certain kinds of ulcers, exhale particular odours. Brieude has not, perhaps, insisted sufficiently on the febrile odour; on those of putrid and malignant fevers; on that mouse-smell *(odeur de souris)*, as the practitioners call it, which prevails in hospitals and jail-fevers. From the gangrenous humid ulcers of hospitals, there arises also a very particular smell, which may be marked as a symptom. Cadaverous stools, their modifications in different epochs of a disease, ought in like manner to be attentively examined by the smell, and would thus become the source of very important medical indications.

Chemical Observations on the Epidermis; —By I. A. CHAPTAL.

THE human skin is perhaps that which exhibits the Epidermis most conspicuously, and easily to be removed: upon it have been made the experiments which I now proceed to detail.

The human skin becomes hardened by means of hot water, and separates into two distinct parts, the epidermis and cutis; the latter of which has the consistence of soft cartilage.

The continued action of hot water will at last dissolve the cutis, and it will not sensibly attack the epidermis.

Alkohol

Alkohol topically applied to the epidermis, makes no impression upon it: caustic alkali dissolves it; lime produces the same effect, but more slowly.

There is therefore an analogy between the external covering of the human body and that which covers silk-pods.

From these principles we may draw some consequences that may be easily applied to the operations of tanning.

1. If a skin, covered with its epidermis, be plunged into an infusion of tan, the tan will only penetrate the flesh-side; the other side being defended by the epidermis, which is not susceptible of the tanning principle.

2. When the epidermis is taken off, by the operation of peeling, then the tan penetrates the surface of the skin.

3. The lime generally used in this process, appears only to act in dissolving the epidermis. Lime-water has more action than lime not dissolved; but, its effect ceases the moment the lime held in solution is combined: hence the necessity of renewing the lime-water, to accomplish the taking off the skin.

Extract of a Report on the Means of purifying the Air in Sick Chambers, from Infection:—By J. B. Van Mons.

(From the Transactions of the Medical Society of Brussels.)

I HAVE in general found the air in the chambers of sick persons composed of a quantity of carbonic acid gas, hydrogen gas, oxygen and azote, with, sometimes, a small portion of ammoniacal gas, and of that particular emanation, which is called contagious miasma, and which appears to be a peculiar combination of carbonated hydrogen gas, with those particles, the nature of which is as yet little known. The hydrogen gas, however, generally holds in solution, pure carbon, phosphorus, &c. hence arises the disagreeable smell of these airs. The carbonic acid gas would form a much more considerable part of the air which surrounds the sick, if that gas were not continually condensed, either by the ammonia generated and disengaged in all these cases, or by the decomposition of animal substances containing azote. We have seen into what contradictions those have fallen, who have admitted in the air, at the same time, the carbonic and ammoniacal gas. We have, in like manner, seen the want of just conclusion, in exposing vessels filled with lime-water, in chambers, the inconvenience of which is, in every case, to leave or introduce into the air, the ammoniacal gas, by the absorption

absorption of the carbonic gas, and sometimes to condense an irrespirable gas.

I am satisfied, that in a ſtate of health we form more water, in sickness more carbonic acid. The carbon appears to require a certain temperature, to exercise a ſtronger attraction upon the oxygen, than the hydrogen.

(The remaining part of this article is occupied with the means of purifying infected air, and of adding to it a portion of respirable air.)

Among the first means, I class water in a state of vapour, which is hurtful to few sick persons, and which, being a better solvent, precipitates the volatile and putrid emanations, more readily than the muriatic and acetous acids. When the air is surcharged with ammonia, I think it better to disengage it by means of the carbonic acid, than by vinegar or any other acid. The case, in which Citizen Guyton successively employed the gazeous muriatic acid, is altogether different from those of which we now treat.

The sulphurous acid gas might be, in some cases, used for decomposing miasmata by overcoming them with its oxygen; but it leaves behind an oxyd of sulphur, the smell of which is very injurious. The oxygenous muriatic gas is therefore preferable.

The gases which I consider as increasing the irrespirable portion of air, are the carbonic acid, and the hydrogen. The former ought to be passed through water, and the latter through oil. The carbonic acid gas is by this process deprived of the portion of acid which is employed to disengage it, and the carbon is precipitated from the hydrogenous gas which holds it in solution. The oil, after having been for some time thus used, becomes quite black, and is changed into empyreumatic or carbonated oil.

Further Account of Dr. W. Currie's *Observations on the Causes and Cure of Remitting Bilious Fevers.*

IN the 'Critical Retrospect' of our first Number, p. 105, we gave only the general result of Dr. Currie's inquiry into the nature and origin of the bilious and yellow fevers; in this place, we propose to gratify our readers with some leading particulars of that interesting publication.

The nature of the work, and the design of the author are set forth in his introduction, in these terms:—

" The following production (the result of much reading, reflection, and considerable

considerable experience,) contains observations on the situations, climates, and seasons, in which *remitting* or *bilious fevers*, are most prevalent; the causes from which they originate; the circumstances which render them epidemic: remarks on Sydenham's doctrine on the influence of constitutions or conditions of the atmosphere; an examination of the question, whether intermittents or remittents are contagious or not? and a comparison of their distinguishing symptoms with those of the contagious fever commonly called the yellow fever, which has occasioned so much mortality and distress in different sea-port towns of the United States of America, since the year 1793; with a description of the remitting fever, as it appears in Philadelphia: and the method of treatment which the author has experienced to be most successful.

"An abstract is also annexed of the opinions and observations of almost all the physicians that have practised in different ages, and in different climates, which have come to the author's knowledge, that he thinks worthy of notice; the object of which is to furnish those at a distance from public libraries with a compendious and connected view of every thing interesting that has been published, and that lies scattered in a multitude of volumes on the subject; free from the perversions of fallacious and misleading theory, or the misrepresentations of uncharitable and distorting party spirit."

Under the title of *Observations on Bilious Fevers*, the author, after defining the term bilious fever, proceeds to enumerate various countries and situations, in different parts of the world, which are subject to this disease; which he very justly remarks, "is amazingly influenced in its aspect and symptoms, by the soil, situation, climate, season, and by the preceding and present qualities of the atmosphere, and the customary mode of living of the inhabitants.

The principal part of Dr. Currie's publication consists of '*An Abstract of the Opinions and Practice in febrile diseases of Physicians of different countries*,' &c. with occasional remarks preceded by Dr. Buel's Account of the Sheffield fevers of 1793, 1794, and 1795 (from Webster's Collection), and two letters to the author from Dr. Johnson, of Talbot County, Pensylvania, and Drs. Taylor and Hansford, of Norfolk—extending in the whole from the 79th to the 206th page inclusive. In this abstract, after a hasty sketch of the opinions and practice of several of the ancient, and of the earlier modern physicians, the author proceeds to display, in their own words, generally those of *Hoffman, Pringle, Cleghorn, Huxham, Morgagni, Tissot, De Monchy, Lind, Badenoch, Rush, Baker, Cullen, Blane, Moseley, R. Jackson, G. Fordyce, Paterson,* and *Wade*, at various length; and the conclusion which he derives from this copious survey of the writings of others, is, "that the remitting, or bilious fever, as it is commonly called, is only a variety of the intermitting

ting fever, occasioned by an invisible matter (known to exist only from its effects) derived from dead animal and vegetable matter, in a state of putrefaction; that it is distinguished by an evident remission or abatement, but not a total suspension or cessation, of all the febrile symptoms, once in the course of every twenty-four hours, most commonly in the morning, and a renewal and increase of the same before the evening, differing in this as well as other circumstances, from the typhus, or continued fever, occasioned by human contagion, in which there is almost always an exacerbation, or increase of the fever, later in the evening; that the nearer it approaches to, or resembles the intermitting type, the greater is the prospect of safety; that the paroxysms are prolonged, and intermissions prevented, or rendered imperfect by two opposite circumstances, viz. by a *phlogistic* diathesis, and by preternatural *depression of strength*; that this kind of fever is not contagious, or communicated from one person to another; and that it differs from the malignant yellow fever, not only in that respect, but in its causes, nature, and symptoms, as well as in the remedies requisite for its cure." And finally, "that no general or infallible rule can be established, with regard to blood-letting in remitting fevers, derived from marsh-miasmata. Indeed it is observable, that of all the late writers quoted by Dr. Currie, Dr. Moseley is the only one who decidedly recommends venesection.

To this 'Abstract,' Dr. Currie has prefixed a "*Description of the Bilious Remitting Fever, as it usually appears in Philadelphia, on summer and autumn,*" drawn up with equal perspicuity and precision. His remarks on the predisponent causes, prognosis and on the weather, are valuable. The Doctor's plan of cure consists in removing the patient to a dry situation and pure air, after the remote causes of the disease have been subdued; and in procuring such an intermission of the symptoms, as shall admit of the administration of the Peruvian bark. To this end, bleeding is recommended; an operation which our author has sometimes found it requisite to repeat (from ten to twelve ounces) every day, to a fifth time; and in a few cases, he has opened a vein twice a-day. Calomel is particularly preferred, upon the authority of Drs. *Balfour, Clarke, Wade, Chisholm,* and others, as a purgative, and, joined with opium, to take off the irritability of the stomach; sweating by means of antimonials, is deemed necessary to procure an intermission; and the cold bath, upon the credit of Dr. *R. Jackson*, when the stomach rejects the bark—which the author advises to be given by injection into the bowels, as well as by the mouth. To reduce the dropsical swellings which sometimes succeed, ten or fifteen grains of potass, two or three times a-day, in some bitter draught, are directed; in more troublesome cases, the digitalis, squills, alternated with chalybeates, mercurial frictions," &c. &c.

An Ana-

An Analysis of FOURCROY'S *Observations on the Experiments made by the English Chemist* MAYOW, *towards the End of the seventeenth Century.*

[Extracted from the "Annales de Chimie," No. 85.]

THE author begins with observing, that MAYOW'S discoveries were not made known to the world, till his works were reprinted in 1790, in England; that LAVOISIER took no notice of this chemist, who without dispute preceded BOYLE and HALES in the path generally believed to have been opened by these illustrious philosophers; and that Mayow had even proceeded farther, and more decisively, than his predecessors before-mentioned. Mayow's work seems to present a variety of truths and discoveries brought forward by the chemists of the present day. The correspondence of his ideas with the present pneumatic doctrine is striking. It is therefore just, says FOURCROY, to restore to the memory of this physician what is due to him; but it is also just to point out the difference between the discoveries, and even the experiments of Mayow, ingenious and conclusive as they appear, and the exact researches of the philosophers of our day, as well as the certain results drawn from thence.

John Mayow, physician in London, published at Oxford, in 1669, a work containing five Latin Dissertations, which were reprinted together in 1674, and 1681, under the title—"*Johannis Mayow, &c. opera omnia medico-physica, tractatibus quinque comprehensa.*" Two of these treatises, the one *On saltpetre and the nitro-aërial spirit*, and the other *On respiration*, contain a number of singular and new ideas, on the agency of the air in combustion and respiration; on its diminution and absorption by these two phenomena; on the analogy subsisting between air and nitre in supporting inflammation: on the identity of the principle of air with the acid of nitre, and on the formation of that acid by the igneo-aërial spirit. We find here asserted, in the clearest and most positive manner, that the blood absorbs a part of the air called vital; that the blood is heated by that absorption, or by the presence of the air in the lungs. Mayhow also demonstrates that the red colour of blood, and the change of venous into arterial blood, depend entirely on its contact with the atmospheric air. In a word, this work contains a number of ideas, which have now become demonstrated truths, since natural philosophy and chemistry have determined the real influence of the air in combustion, in the calcination of metals, and the formation of acids: and if Mayow had been able to exhibit, in a separate state, the vital air of the atmosphere, and extract the substances therein absorbed, or held in solu-

tion; if he had known its essential properties, and described them in a clear and distinct manner, he would have established the whole basis of modern theory of combustion; the formation of acids; and of respiration;—of which he has, however, given only a general data.

The point of view in which Fourcroy proposes to consider this subject, is to present a succession of machines, apparatus, and medico-chemical processes, by means of which Mayow endeavoured to ascertain, by experiments, the action of inflammable bodies, and the respiration of animals on the air, as well as the reciprocal influence of the air on these phenomena: taking at the same time a view of the principal theories of that author.

In examining the fifth plate of the work cited, and which is placed at the end of the fourth treatise, '*De motu musculari*,' opposite to page 383 of the Hague octavo edition, we are astonished to recognize, at once, the apparatus represented in six figures to be nearly the same, not only with those which Hales used, and had engraved fifty years posterior to this philosopher, without taking notice of, and perhaps even without being acquainted with those of Mayow, but also with the machines of Priestley and Lavoisier; contrivances which have been supposed to be perfectly new, a century after the discovery of the English physician. By these, particularly the glass retorts, he was able to determine, that air was in part fixed, or diminished and absorbed by combustion and respiration; that these two phenomena were attended with a similar effect; that this property of promoting the one or the other was peculiar to the air; in a word, that there was only one part of the air, namely, the most subtle and elastic, that could be called vital, and which served to promote inflammation and respiration.

Mayow's first and most important dissertation principally aims at explaining the nature of nitre; its spontaneous production; the analogy of its acid with the air; the existence of a principle in the atmosphere, of the same nature with nitre, which supports combustion, flame and life; a very active principle in all chemical phenomena, and in the properties of which we cannot but see the most striking correspondence with the vital air, or oxygenous gas, discovered by Priestley, a hundred years after.

In the seventh, eighth, and ninth chapters of the first treatise, Mayow describes the experiments by which he supports his theory of combustion and respiration, after having premised, that the air contains particles which he calls *nitro-aërial*, and which are necessary to produce fire; so that when that element is once deprived of these, the air can no longer renew inflammation; and, according to the degree in which it is thus deprived, it loses its form and elasticity;—he shews, that the flame being extinguished in a

cupping-

cupping-glass applied to the skin, it caused a vacuum; the skin pressed by the external air, became prominent within the glass; and this vacuum, as well as the extinction of the flame, proceeds from the circumstance, that the nitro-aërial part was absorbed, and had lost its elasticity. To shew the manner in which Mayow proves this assertion, Fourcroy cites a variety of experiments from the seventh chapter of this dissertation, which he observes, appear to prove, that Mayow perfectly understood the influence of the air in respiration; that he had formed a conjecture of the nature of the atmosphere; that he conceived the absorption and true diminution of its vital part, by combustion and respiration; that, in a word, these passages would evince a glorious priority of discovery in Mayow; but from the subsequent passages it appears, that although he had proceeded to a certain length, in that course in which he had no competitor or successor for upwards of fifty years, yet that he did not go far enough, nor pursue his progress with that firmness which was necessary to ascertain and establish the truth.

In the 8th chapter, proceeds Fourcroy, Mayow speaks of the nitro-aërial spirit as absorbed by animals, "*De spiritu nitro-aëreo quatenus ab animalibus hauritur*," and treats, at considerable length, of the phenomena of respiration, with respect to the air. He had, he says, in a former work, proved that the principal use of that function was to separate the air, and to unite to the mass of the blood, by means of the lungs, certain particles necessary to the support of life; that the air proceeding from the lungs of animals, is deprived of certain elastic parts, and its volume is therefore considerably diminished in proportion to the abstraction of the nitro-aërial particles. To describe the manner of that separation, and to prove that it is caused by penetrating into the mass of the blood, and depositing there such particles, he enumerates some experiments, which our limits will not permit us to detail, but which corroborate the evidence of his having arrived at the knowledge of the nitrous air or gas, without being sensible of the discovery; but here again there appears the same kind of diffidence and confused reasoning, which every where shews this ingenious discoverer to have been, in many respects, irresolute and not fully master of the grounds on which he proceeded; and still we read of the loss of elasticity of the nitro-aërial spirit, with a dimination of volume: he has, however, been aware that vapour, disengaged by the effervessence of the spirit of nitre with iron, did not proceed from the air, which was diminished only in proportion as the nitro-aërial spirit was exhausted. His intention is to explain, how that spirit is condensed by the blood, and to this end he directs the result of experiments. He compares blood to a mixture of iron and acid, and states

states them to be liable to a similar fermentation; and as he explains the condensation of the nitro-aërial spirit by this fermentation, it is pretty evident, that to such fermentation of the blood—he attributes the same condensation in the process of respiration. Here, says Fourcroy, he seems to have got into false reasoning:—the fermentation of the blood proceeds from the condensation of the nitro-aërial spirit, and that condensation is produced by the fermentation of the blood;—the particles of that spirit being once condensed, he admits their introduction into the mass of the blood, and makes them, at the same time, very powerful agents. He attributes to them the red colour, the heat, and fluidity of the blood. From this cause, he believes, that the part of the blood is black, which is not in contact with the air, and of a florid colour in the contrary case; that the venous is black, and the arterial remarkably red; that violent exercise, as it accelerates inspiration, is overheating, as is also frequent voluntary respiration; that the fever of the consumptive proceeds from the force with which the morbid matter in the lungs attracts and absorbs the nitro-aërial spirit, with which it enters into a strong fermentation; that if the venous and arterial blood be placed in the vacuum of Boyle, the former presents only some globules, and the latter is entirely dissipated in fr[illegible] He further adds, that the nitro-aërial spirit gives the red colour to bodies in which it exists, not unlike the fuming spirit of nitre. He compares the heat produced by the condensation of this spirit in the lungs, to that generated by a flint eliciting sparks, and also attributes vitriolisation to [illegible] same cause.

Fourcroy proceeds to the ninth chapter of Mayow, and details from thence a variety of processes to convey the air or elastic emanation from one jar into another, or to admit a part of it, to transfer it from one vessel into another, to place them in a pneumatic receiver, in order to measure the dilation caused by the vacuum; which is evidently the same with the process of this day, or that of Hales, and superior to that of Boyle.

This ninth chapter is an inquiry into the production of air. Mayow wa[s] not satisfied with discovering the elasticity of the vapour he attracted, by the effervessence of the spirit of nitre with iron; he was further desirous to determine the analogy and difference of that vapour in proportion to common air. In this respect, the apparatus he employed, enabled him to extract, collect, and convey elastic fluids; processes which have been since lost for above a century, and are only restored to us within these twenty years.

This article having been extended so far, we cannot go into a d[illegible] of the several apparatus and processes employed by our countryman in his disco-

veries.

veries. For these we must refer the reader to his works, and shall conclude by extracting Fourcroy's general observations, with which he accompanies his memoir.

"No philosopher, especially at the end of the last century, had treated of the theory of combustion and respiration, the comparison of these two natural phenomena, the reciprocal influence between them and the air, and the effects of that fluid, compared with those of nitre, on combustible bodies, at such length and so acutely as this English physician: no person had contrived so ingenious an apparatus and processes, altogether different from those employed by the philosophers of that day; nor made experiments so novel to discover the cause of the necessity of air in combustion, as well as in respiration; and, although neglected and unknown for more than a century, even condemned by his cotemporaries as altogether futile, these pneumatic processes undoubtedly deserved to be rescued from the oblivion in which they have been buried, for one hundred and twenty-five years. But while we render every justice to Mayow, and his ingenious discoveries, some of which were far superior to the ideas of the most celebrated philosophers of that age, and much resemble the pursuits and acquirements of those of the present day; while I feel pleasure in avenging his memory of the inconceivable contempt, or at least indifference, shewn by his cotemporaries to his brilliant researches, even among his compatriots, who are usually jealous of the glory of their country; I must say, that he did not push, so far as he might have done, the first data which presented themselves to him; that the thread of his discoveries was broken in his hands, and that he had little more than entered upon a career, of the extent of which he had no conception; that he was not even sufficiently struck with the novelty and importance of his first discoveries: that, instead of pursuing the path of experiment which his new processes pointed out, he gave himself up to hypothetical reasonings, which interrupted his progress, and threw him into an ocean of uncertainties and contradictions, in obliging him successively to admit and reject the condensation, diminution, absorption, and fixation of air; in a word, that while he seems to dispute with the first modern chemists the invention of the pneumatic chemical apparatus, he leaves them, at the same time, all the glory, and detracts nothing from their merits."

Outlines

Outlines of Medical Geography: being an Inquiry how far Calcareous Soils, or Strata, counteract the Septic Exhalations, which occasion Distempers of a febrile or pestilential Type.

[Extracted from a Letter of Dr. MITCHELL, of New-York, to Dr. HAWORTH, of Oxford.]

IF there is any solidity in the observation made in my Letter to Dr. Beddoes of September 15, 1797, concerning the comparative mildness or rarity of pestilential and febrile distempers in countries underlaid with extensive strata of superficial *lime-stone*, as happens in some parts of the United States, then England ought to exhibit something of the same kind in the counties where *chalk* is very prevalent. I now set myself down to recollect what I remarked about calcareous earth, in travelling from Dover to London, and during a walk I once took from London to Oxford, and its environs, Woodstock, Blenheim, and back again.

The chalk cliffs, in the neighbourhood of Dover, are talked of by all persons who navigate the channel, or who barely pass from any of the opposite ports of France to this part of England. It has not been so generally noticed that the land from Folkstone, in Kent, or thereabout, along by South Foreland, and almost to Deal, together with a good part of the Isle of Thanet, including both Ramsgate and Margate, has a chalky bottom. Indeed, with very little interruption, the calcareous material prevails to a very considerable extent, on both sides of the road from Dover to Canterbury, and thence to Rochester. In short, I may say, it extends westward quite to the county of Surry, and passes into it by a tract almost as broad as the distance from Deptford to Westerham. This is the most healthy part of the country, as may appear by comparing it with the unwholesomeness of Oxney Isle, Romney Marsh, and the Isle of Sheppey, where not chalk, but siliceous sand, flint, clay, and loam, constitute the principal part of the soil. (See the Map prefixed to Mr. BOYS's General View of the Agriculture of the County of Kent. London, 1796.)

The chalk continues through part of Surry, Berkshire, much of Oxfordshire, quite into Gloucestershire, and prevails extensively in Buckinghamshire, Middlesex, and somewhat in Essex. Oxfordshire, though situated so far inland, is famous, in many places, for its petrifactions and incrustations of calcareous earth. Through this cretaceous land run the Isis, the Charwall, the Windrush, the Evenlade, the Thames, and, according to Dr. PLOT's enumeration, seventy other streams of inferior rank, whose collected waters pass

through the enumerated chalky tracts to London, and the greater part of the distance thence to the sea.

The inferences to be drawn from these geographical facts are two; 1st. That an extensive body of chalk, of calcareous earth, of very considerable breadth, tinctures, with its peculiar qualities, the soil of England, from the German ocean westward, to the hills, which separate the waters of the Severn from those of the Thames, in Gloucestershire; 2dly, That the greater part of all the streams falling into the Thames, run through a country charged with calcareous earth, and consequently must be considerably impregnated with that material.

With regard to the first point; if the *ceptic gas* or *effluvium* is, as experiments lead us to believe, of an acid nature, in that case it ought not to be very abundant, or long prevalent, as a cause of epidemic, malignant, and pestilential distempers, where the land is composed, in a great proportion, of calcareous earth; or, if in any place, or at any time, it should happen that febrile disorders, of greater or less malignity or inveteracy, break out, this ought to happen in consequence of too much acid present for the chalk or lime to neutralize. On looking over the first authority that comes in my way, "*Martin's Natural History of England*," (the edition published in 1759,) I find Surry generally denominated "a pleasant country;" Middlesex commended for its "exceedingly healthful air;" Berkshire called "one of the most pleasant counties in England;" Buckinghamshire said to possess an air generally good, especially on the Chiltern hills; and, though the vale is dirty, "not so unhealthy as many other low lands in England, *the soil being marle or chalk*;" and the eastern part of Gloucestershire, where the Evenlade and Windrush rivers arise, though less fertile than the western part of the county along the Severn, and more exposed to wind and cold, "makes amends by its healthfulness."

The healthfulness of Oxfordshire is almost proverbial; and the judicious choice of King ALFRED has long been commended for pitching upon so wholesome a spot as that where the beautiful city of Oxford stands, as a seat for the Muses. This has been considered as very strikingly manifested by the two following circumstances:—1st. An observation of long standing, that although the small-pox is as frequent there as any where else, the effects of it are seldom fatal; and 2d. that when the pestilence, in 1665, was spread in a manner over the whole kingdom, though the court, both houses of parliament, and the terms were held in the city of Oxford, yet the plague, notwithstanding, was never there at all.—(1 Martin, 368.)

On the other hand, where, along the fenny hundreds of Essex, the joint operation of the current of the Thames, and the tides of the ocean, has brought

brought together great bodies of sand and clay, that had been diffused through the water, and been deposited by it, together with all such remains of animal and vegetable matter as constitute the deep mould of those tracts, the country abounds thereabout with septic exhalations, which are very injurious to the health of the inhabitants, where the neutralizing power of calcareous earth or chalk is wanting: and, as far as I can judge, a deficiency of the same material enters deeply into the explanation of the unhealthiness of the fens of Lincolnshire, and the adjoining hundreds of Fleg and Mershland in Norfolk.

It must be observed, however, although chalky and calcareous soils are thus destructive of that kind of air or vapour which produces agues, fevers, &c. that it does not follow, by the rule of contraries, that all sandy, loamy, gravelly, and clayey soils, must be unhealthy. This may, however, be remarked, that in the United States of America, the most sickly parts are the tracts along the Atlantic, where the land consists in pretty much the whole range from New-York to Florida, of silicious sand and clay, variously mingled, and tempered with more or less of mould, without any considerable ad-mixture of calcareous earth; and this, when it occurs, consisting principally of concretions of marine shells, dug up in some parts of Virginia, and the other southern states. As to our cities, the scite of New-York is a sandy loam or gravel, except that part where the *plague* has usually prevailed hitherto, which is built upon salt meadow, miry swamp, and rotten trash, Philadelphia stands partly upon a sandy, and partly upon a stiff loamy or brick earth, impermeable to water, and destitute of a sufficient portion of calcareous earth to keep down and attach pestilential fluids. Of both these cities it may be remarked with truth, that although they were built in a bottom of *lime*, or *chalk itself*, there are local causes enough to engender the the worst forms of distempers, as happened at the famous assizes in Oxford, where the filth accumulated around the wretched criminals in prison, generated pestilential matter enough to poison a considerable number of the court and attendants.

As far as I can comprehend the subject, the general conclusion is this:—Countries abounding with calcareous earth, are mostly free from the ravages of wide-spreading epidemics, by reason of the power that material possesses of neutralizing the acid of putrefaction; though, from particular local causes, pestilence may be manufactured in places thus favourably circumstanced: while those places, which are most remarkable for the prevalence of malignant and pestilential diseases of that kind, consist of a soil through which chalk and lime are scantily scattered. England affords abundant proof of the former; the United States, of the latter observation.

To proceed now to the second point. The numerous streams of water, whose united body forms the Thames, run principally, it was said, through a tract of country, plentifully furnished with chalk. The form in which this calcareous earth is most prevalent, is that of carbonat, or in combination with fixed air, and capable in many places of being burnt to quick lime: though, doubtless, where the septic (nitric) acid exists, it unites with the earthy basis into calcareous nitre. There is, unquestionably, somewhat of a muriat of lime, especially below London-bridge, and the whole distance thence, through the brackish and salt water, to the ocean. And perhaps there may be, in some places, a combination of the sulphuric acid with the calcareous matter, forming gypsum. The small quantity of gypsum which exists there, and if much did exist, the very trifling proportion of it which water is capable of dissolving, leave very little to be said concerning it here. The muriat of lime is there probably in too small proportion to be matter of consequence, any where above the flow of the salt water; and though, as CAMDEN says, the river swells as high as Richmond, which is sixty miles inland (*Britannia*, 187) with the tide, yet the salt reaches no great distance above Gravesend.

The septite of lime is soluble in water: but, as it is also a nutritive ingredient in manures, and easy of resolution into its constituent parts by plants, it is presumable that a large proportion of what is formed of that compound, undergoes decomposition on the soil where it is produced. The carbonat of lime, then, or common mild chalk, is the material upon which the streams of water, in the case before us, must principally act.

Water may work upon this mild calcareous earth in two ways: 1. by acting as a menstruum, or jointly with some substance which is a menstruum, and *chemically* dissolving it; and, 2. by *mechanical* attrition, wearing it away, reducing it to fine particles, and while it is diffused and floating through the liquid, carrying it down in its proper form, to be mingled and deposited with the various matter of intervale spots, alluvial shores, and secondary islands.

It is hard to determine what quantity of calcareous earth is brought down in these two modes, from the adjacent counties into the bed of the Thames, and hurried along with the stream towards its disemboguement. When all circumstances of showers, rains, freshets, and the unceasing atteration of the streams along their channels, are taken into the account, the quantity would seem to be very considerable. This chalky substance, whether dissolved in the water, or diffused through it, cannot fail to modify and influence it remarkably; in an especial manner contributing to fertilize the low lands in the neighbourhood of the river, which it visits or overflows.

 Thus

Thus the septic and other acids with which the Thames water is charged, are in a great measure, and perhaps quite, neutralized by the calcareous earth before it reaches London. The quality of the water there will be in a good degree determined then, by the materials furnished by that city. The acid of putrefaction and other acids running into it from the sewers, will, under the existing regulations, be neutralized by the refuse alkaline matter of house-keeping, and other consumptive processes: and the pot-ash and soda thrown away in soap, &c. seem to more than counterbalance their opponents, and give a preponderating influence to the alkalis. Hence evidently proceeds the boasted softness of the Thames water, for the washing of linen; for enabling the London dyers to strike their bright and lasting colours; for keeping so well at sea as it does; and probably enabling it to extract, in a very complete manner, the substance of malt, to form their excellent porter. Is not all this confirmed by the fact known to navigators, that the Thames water, after long keeping, deposits a stony sediment on the bottoms of the casks?

That fertile tract of land, the Carse of Gowrie, in the county of Perth, Scotland, which is reckoned to possess a climate more mild and favourable to vegetation than any part of that kingdom, affords direct evidence of the healthiness consequent upon using lime as a manure. The soil consists chiefly of rich clay, loam, and sharp gravel; and the inhabitants, until the year 1735, used to be subject to the ague. Then, one or two of the principal proprietors undertook, by draining, summer-fallowing, and sowing grass-seeds, to improve their estates. Accident led them to the discovery of the efficacy of lime on that soil, from observing the powerful effects of some old lime rubbish of decayed buildings, when spread on the corner of a field. The liming their lands then came gradually into use, and has since been generally adopted; the consequence of which is, *the ague has long disappeared.* Here seems to have been a beautiful experiment made upon about ninety-six square miles of country, where the septic steams that formerly gave the people agues, are now attracted by the lime, and turned to calcareous nitre; while increased productiveness of the land, and greater wholesomeness of the air, continue to be the happy consequences. (*Donaldson's General View, &c. p.* 12, *et seq.*) Some judgment may hence be formed, concerning the power of art in changing the face of nature. What a grand reflection, that an inconsiderable quantity of powdered lime strewed over the land, should thus coerce the matter of pestilence, and control the operations of the atmosphere!

In LINNÆUS's hypothesis (*I. Amœnitat. Academic.*) on the cause of intermittent fevers, we find a collection of facts to prove their connection with argillaceous earth, or clayey soil. Of this he was so well satisfied, th[illegible]

he concluded, that attenuated particles of clay, taken into the body with food and drink, entered the blood, stuck in the extreme branches of the arteries, and brought on, as a true proximate cause, the symptoms of the disease.— (Hypothesis nova, § .) The sensible inquirer will find, in his fourth section, an enumeration of all the parts of Sweden famous for intermittents, and for strata of argillaceous soil, and the authority of Mr. SANDEL, quoted as an eye-witness of the same coincidence of clayey bottoms and intermittent fevers in Pennsylvania. The facts I take to be indubitable. Linnæus has reasoned upon the subject, by considering argillaceous earth alone. I have viewed it in contrast with calcareous earth, that, by embracing a wider range of facts, the operation of the latter, in tempering the former, may be the better comprehended. Whether my theory is better founded than that of the Professor of Upsal, the experienced and candid will judge.

A concise Analysis of Professors HUFELAND *and* KANT's *Treatise on the Art of prolonging Life.*

MR. HUFELAND, of Jena, had sent to the Pruffian philosopher KANT, a [illegible] of his "*Macrobiotick*," or the art of prolonging life, (which has lately [illegible] translated into English,) and requested his opinion of that performance. [illegible] se now under consideration contains Kant's answer. It is intitled, [illegible] *ulty of the mind to conquer, by the simple act of the will, the sensations [illegible] diseases.*" It has been lately published by Dr. Hufeland, with [illegible] rvations on that subject.

[K]ant declares, that he is not an advocate for keeping the head and feet [w]arm. The Russians, in their severe climate, adopt the contrary rule, which [illegible] even extend to the breast; yet they are not liable to catch cold. [Al]though it may be more agreeable, it is a prejudicial custom to bathe the [feet] in warm water; for this practice produces a relaxation of the blood-[vesse]ls in the extremities, which is not unfrequently the case of incurable [disor]ders of the legs and feet. It is however adviseable, during the rigorous season, carefully to guard the abdomen against cold.—Too much sleep he considers to be an enemy to longevity; it is apt to produce weakness and epilepsy in nervous habits; and, instead of affording nourishment, has a directly contrary effect; as has every degree of excessive care of the body. He justly considers equanimity of mind as a great means of preserving the [health] and leading to old age. He observes, that having himself a flat and [narrow] chest, which allows little play to the heart and lungs, he is naturally [hypoc]hondriac; but the reflection that this malady, being purely mechanical, cannot be cured, makes him free from anxiety in that respect; although he

he cannot obviate the pain, yet he has resolution to be master of his thoughts and actions, so as to disengage his attention from it, as if it did not concern him. This firmness he also recommends in cases where persons, especially those in bad health, are prevented from enjoying sleep, and who ought, as much as possible, to divert their thoughts from the sensation of their pain, or other cause of anxiety, whether physical or mental, and direct them to some object less interesting; and at the same time to change their posture in bed.

Kant strongly dissuades literary men from study while they are eating or walking—"If a person at the same time fills the head and the belly, or considerably exercises the head and the feet; it will, in the former case, predispose him to hypochondriasis, and, in the latter, to epilepsy; it is necessary to employ the mind and body alternately." Walking in the open air promotes health, as it diminishes the attention, by dividing it among a variety of objects. On the contrary, when we walk, and at the same time meditate deeply, or still more when we engage in serious conversation with a companion, it is extremely fatiguing, and consequently prejudicial to h[illegible]

Kant having been troubled with a cold and cough, which freque[illegible] attacked him on going to bed, accustomed himself to hold his lips close, a[illegible] breathe only through the nostrils, which had the effect of preventing [illegible] attacks of this disorder; he therefore recommends this custom to p[illegible] general when they sleep, and also when they ride on horseback [illegible] that this practice promotes the secretion of the saliva, which at [illegible] digestion, and encourages the necessary evacuations.

Kant next intreats Hufeland to take particular care of his eyes, and c[illegible] plains of the modern style of printing, as being extremely fatiguing to [illegible] sight. He censures the practice of reading rapidly, particularly runn[illegible] through a variety of newspapers, journals, &c. Both Kant and Hufela[illegible] complain of the colour of the ink used in printing; which, instead of be[illegible] perfectly black, is generally almost grey. Hufeland gives the Ro[illegible] characters the preference, and by way of joining example to precept, h[illegible] '*Art of prolonging Life,*' in German, is printed in Roman letters—Kant pre[illegible] fers the German character.

There is not (says Hufeland) a surer way to shorten the thread of life, than to educate children in an anxious and delicate manner. Their organs and powers are by this means brought forward with similar precocity, as plants in a hot-house. An abuse of the sexual impulse accelerates, in an extr[illegible] nary degree, old age and death. Thus, too early marriages are unfav[illegible] to longevity: in our climates, the man should be twenty-four, and the wo[illegible] eighteen, before they enter into the connubial state. Too violent exer[illegible]

has often proved fatal to youth: "how often have I seen a lovely woman's health ruined by an immoderate passion for dancing! I have seen the rose suddenly fade, droop, and die."

The season in which children are born is by no means a matter of indifference. The spring is more favourable to longevity than winter: the infant then respires more freely, is better able to enjoy the fresh air, and is less liable to be kept too close and warm. The spring and summer have also a vivifying influence; and we see, that the animals born at that time, are the most healthy and stout.

Rules respecting the faculty of thinking.

1. We ought not to devote ourselves too much to serious thought, so as to neglect health: it is necessary sometimes to exercise the mind, and sometimes the body.

2. It is hurtful to reflect constantly upon the same subject; neither the mind nor the body should be always engaged in the same exercise.

3. Metaphysics and abstract ideas are infinitely more fatiguing to the mind than other thoughts.

4. Do not always intensely exert the mind in inventing or composing:—to read or transcribe occasionally will give a salutary relief.

5. To engage the mind in study, at too early a period of life, impairs the constitution. Every mental exertion, before seven years of age, is injurious to the body.

6. Reflections to which the mind is least disposed, will ever be the most fatiguing.

7. To excite the mind by stimulants, such as wine, opium, coffee, &c. is pernicious.—In case of necessity, however, a single cup of coffee is the most advisable expedient.

8. It is doubly prejudicial to health, to exercise the mind while the stomach is employed in digestion. Thinking requires then extraordinary efforts, and renders the progress of digestion much more difficult.

9. We ought, as much as possible, to avoid reflection at the time of going to bed, or when we awake in the night.

10. It is improper, always to study in our chamber, and in a confined, or inconvenient attitude: we should occasionally lie down, stand, or repair to the open air.

Among the things which shorten life, none has greater influence than fermented liquors of every kind—"it is swallowing liquid fire, which in a shocking degree accelerates the consumption of vitality, and literally makes life a process of combustion." The use of these liquors is not only productive of a variety of diseases, but dreadfully impairs sensibility, both moral and physical;

physical; and it may be remarked, that a person addicted to drinking spirits is so completely burnt up, as to be insusceptible of irritation; and, when he is attacked by disease, medicines have rarely the effect of affording him relief.

The author's remarks on the venereal disorder are truly terrific. "The syphillitic virus combines every thing that is painful, loathsome, permanent, and dreadful. Yet we laugh at this murderous poison, and talk of it with pleasantry, as a fashionable complaint. We speak as lightly of it as of a cough or coryza, and we generally neglect to oppose its progress in our families with effectual remedies. No care is taken to check the rapid strides of this horrible contagion, which every where envenoms the vitals of society. My blood boils with indignation, when I see it making its way into the country, and attacking the peasants, formerly so healthy and robust, who form that nucleus which should preserve manhood in vigour and primitive purity. This dreadful scourge was, within these twenty years, not known, even by name, in villages where we now find two-thirds of the inhabitants infected. I clearly foresee, that this evil will continue to extend itself, so that no family will be free from its baneful influence: even the most virtuous and austere will be infected by nurses, servants, &c. It is time to form a barrier to oppose this destructive torrent; and I see no other means for that end, than to establish, upon more solid grounds, the empire of morality, especially among the higher classes; to institute a good police of health, and diligently to inform the world of the nature of this poison, its dangerous consequences, its symptoms, and the best means of prevention."

"The measles and small-pox are certainly not *necessary* evils: they may be avoided; and if general measures were taken for that end, those loathsome disorders might undoubtedly be extirpated. The execution of this plan has been indeed already attempted, in some countries; and the endeavours of the respectable Professor Junker, to effect so desirable a purpose, are highly praise-worthy; but, as it cannot be expected, that this measure will be universally adopted, while there are found even physicians to oppose it, it only remains to render the poison as mild as possible; which experience shews is best effected by the practice of inoculation."

Mr. Hufeland proceeds to consider the possibility of extirpating the small-pox, which he calculates might be effected in the course of four years, if, throughout the whole of civilized Europe, the infected were immediately prevented from communication with the healthy. Too much praise cannot be bestowed on those governments which have interested themselves to carry

this

this scheme into effect, particularly the southern parts of Prussia. We cannot, however, but regret that there are governments which have refused to second the philanthropic intentions of a man so zealous in the cause of humanity; and it is still more distressing, that there are physicians so selfish as to deny their assistance to this benevolent plan, because it would diminish the profits of their profession. And, were an attempt to be made to exterminate the venereal disease, it would undoubtedly meet a still greater opposition, from similar motives of interest.

Our limits will not allow us to extend farther the account of this interesting work, and particularly to insert the author's valuable practical maxims for the conduct of the aged. In a future number, we shall gratify our readers with this part of the treatise.

[illegible] *the practical Study of Botany, by means of chemical Analy-* [illegible] *ly abridged from the original Papers of Dr.* T. S. Hermbstaedt, *&c.*

[Continued from No. II. p. 159—165.]

IN the chemical analysis of a vegetable substance, we propose either to inquire into the nature of its formative elements, or to discover the causes of its medicinal virtues. In the former view, the greater number of vegetable bodies display a remarkable coincidence or similarity in those constituent parts which we are enabled to exhibit in a separate state: while those, the knowledge of whose respective properties, in a distinct form, would be of the greatest advantage, but rarely admit of being separately exhibited. With regard to the latter case, the chemical analysis of a vegetable substance cannot afford us any instruction, concerning the capacity of that substance [illegible] produce positive effects in the animal body; and were we to undertake the analisation of organic bodies with that intention, it would be productive of no advantage. Notwithstanding these restrictions, the chemical analysis of such a substance, if undertaken according to determinate principles, may pave a sure way to the discovery of those elements, on which its medicinal effect principally depends; and, in this view, our chemical experiments on vegetables must be attended with obvious advantage to the therapeutical practitioner.

If we discover the specific power of a plant, or any particular part of it, such as the root, the leaf, the flower, the wood, the bark, the fruit, &c. we [illegible] find ourselves indebted, for this discovery, to the use of it in substance. [illegible] reflecting medical practitioner will, upon this occasion, ever inquire, [illegible] ciple gave this plant its medicinal power? was it really a particular constituent

constituent part of it, or was it the whole plant, or the whole of its substance, which produced that effect? The discovery of this circumstance is naturally the first and most important point of view, in which the chemist attempts a scientific analysis of plants, with respect to their medicinal properties.

We may consider every plant, or its particular parts, as a compound of various heterogeneous constituents. We shall find that the whole of its active powers were determined either by a particular constituent part of it, or that its virtue depended on a combination of two different constituents; or lastly, on the combined activity of all its elementary parts. The usual process formerly adopted by chemists, was that of ascertaining the proportion of watery, oleaginous, or pure gummy parts contained in such a plant, and the particular essence or tincture which it afforded. Such a chemical analysis must naturally have been very fallacious, and altogether unfit for illustrating the medicinal powers of plants; as in this manner the greater number of them could not exhibit any remarkable difference.

A true chemical decomposition of a vegetable body, on the cont[illegible] prove, that such a body is necessarily compounded of a great variety of heterogeneous ingredients, which, by chemical process, can be separated from each other, and exhibited as distinct substances. If we succeed in this attempt, so that none of the different constituents is thereby changed in its nature, its efficient power must consequently remain unaltered. If, in this manner, we shall reduce a vegetable body to its proximate elementar[illegible] parts, that is, such as are not subject to any farther change, then only are we enabled to ascertain with plausibility, the medicinal effects of each individual constituent part. Should it therefore be found, that one of these parts is capable of producing that effect, which we have formerly observed to take place from the use of the whole plant in its integral state, we ma[illegible] justly conclude, that this part alone contains its medicinal virtue. If, however, it should be observed, that none of the individual constituents manifest this power, it will then be necessary to recur to experiment, whethe[illegible] a combination of two, three, or more of them, previously discovered, [illegible] all of them jointly, are capable of producing that effect.—After having thus learned by experience the knowledge of that substance which is the principal agent in a particular plant, we shall then be enabled to judge, what medicines may be prepared from it, and what chemical process ough[illegible] to be adopted in such preparation. This is the only true point of view [illegible] which the chemical analysis of a plant should be undertaken, if the inquirer expects to improve the Materia Medica by such pursuits.

An accurate examination of vegetable bodies will readily inform us [illegible] those elements, of which nature has composed them, may be apt [illegible]

into parts mixed in an *aggregate form*, and into parts *chemically combined*. Among the former are comprehended those vegetable ingredients, the presence of which may be discovered without recurring to chemical analysis, which consequently can be exhibited as distinct objects, without a complete decomposition of the elementary mixture of such vegetables. Of this nature are, 1. water; 2, the saccharine ingredient; 3. the basis of oil; 4. that of camphor; 5. fat, &c. All those parts, on the contrary, which are so intimately blended, that they can only be recognized and exhibited after a complete dissolution of the elementary mixture, justly deserve to be denominated *constituent* parts, or elements chemically combined.

From the tables of elementary constituents already exhibited *, in which the primary, as well as the secondary elements of vegetable bodies, together with the simple vegetable acids, have been enumerated, it is obvious, that such bodies contain a considerable number of heterogeneous ingredients. It is hence also self-evident, that a chemical analysis of this kind, to be ren-d productive of real utility, will require an uncommon degree of accu-d indefatigable perseverance.

is not in every instance, even with the most experienced chemical , an easy matter to determine, to what particular constituent parts ught to direct his attention, in analysing a vegetable body; it appears be equally useful and necessary, to specify some chemical tests, or re-ents, by means of which he may previously ascertain the general con-uent parts of any particular plant, with a certainty similar to that with ich he has long been accustomed to ascertain those of mineral waters.

The following is a list of the chemical re-agents hitherto used by Hermbstaedt, the number of which, however, might be considerably eased:—

A perfectly pure *alkohol*.

A very pure *vitriolic ether*, which is freed from water, as well as spirit wine.

3. Pure *distilled* water.
4. A somewhat concetrated solution of the *acetite of barytes*.
5. A solution of the *muriat of lime*.
6. A saturated solution of the *muriat of iron*, which ought to be afterwards diluted with water.
7. A solution of the *sulphat of silver*.
8. A highly *concentrated acetic acid*.

9. Rectified

* See No. I. p. 75, and No. II. pp. 159. 162.

9. Rectified *etroleum*, or rock-oil.

10. A concentrated solution of pure kali or potass, or *caustic vegetable alkali*.

11. A solution of the *acetite of lead*.

12. *Blue turnsol paper*, or *litmus*, properly prepared.

13. *Caustic spirit of sal ammoniac*, or *aqua ammoniæ puræ*.

14. *Carbonat of potass*, or *kali præaratum in crystals*.

15. A very pure *nitric acid*; and—

16. A *concentrated vitriolic acid*.

Of the Method of employing these Re-agents.

In order previously to examine, by means of these re-agents, the constituent parts of a particular vegetable body, we ought to procure small glass retorts, containing about one ounce measure. Such vessels are convenient not only for making experiments, on a small scale, with vegetable bodies, but likewise with any other substances. With such an apparatus, and the necessary re-agents before enumerated, we may confidently begin o[illegible] perimental inquiries in the manner following:—

A. To ascertain the presence of *resinous matter*, a small quantity o[illegible] powder of the vegetable substance under experiment is placed in a g[illegible] retort, with three times its weight of vitriolic ether; the whole is allow[illegible] to stand for half an hour in the open air, if in summer, or in a moderately warm room if in winter, occasionally shaking the vessel. If during [illegible] time, the ether swimming on the top has not changed its colour, it is a certain criterion that no resinous particles are contained in the substance under examination. On the contrary, as the ether is more or less tinged, the quantity present of the resinous matter may be inferred.

B. The *saponaceous* principle may be easily discovered in substances yi[illegible] ing no resinous parts, by pouring on another small quantity, in the ret[illegible] three times the weight of alkohol, treating it in a manner similar to the preceding, and, if necessary, somewhat increasing the degree of heat. If the alkohol remain untinged, the vegetable contains no saponaceous matters, as these would be held in solution by the alkohol. According to another process, the examination of a substance, as to its resinous and saponaceou[illegible] ingredients, may be undertaken at one and the same time. As alkohol [illegible] capable of dissolving both ingredients, the vegetable body only requires to be digested in that liquid. If after this process, the clear solution, being poured into six times the quantity of cold water, become turbid, the presence of resin is then manifest; but if no turbidness arise, it contained only saponaceous matter.

C. To

C. To prove the existence of *saccharine* matter, we ought to attend to the following circumstance. If by the preceding test the presence of saponaceous matter has been already discovered, the same vegetable body may be subjected to the test of alkohol, in a more elevated temperature. Thus the saccharine ingredient will be likewise separated, and may be afterwards obtained by crystallising the sugar in a reduced temperature.

D. The matter of *gum* may be separated from vegetable substances, by extraction, in a moderate heat, with distilled water. Should the solution be turbid, which would indicate, that it is also mixed with resinous particles, it ought to stand till it become cool, and then be filtered through porous paper: the clear fluid must next be evaporated until, in a cold place, it acquire the consistency of a thin syrup. In this state three parts of alkohol, exposed to a reduced temperature, must be poured upon it; and if a complete solution take place, we may then conclude, that the whole of it consists of pure matter of soap, without any particles of gum; for, if the latter had been present, it would have been separated from this fluid in tender flakes.

E. The presence of *mucilage* can be ascertained in a manner analogous to the preceding, as the same solvents are applicable to both. But in order to distinguish it, with sufficient accuracy, from the substance of gum, as has already been pointed out, (No. I. page 75, of this Journal,) it is indispensably necessary to attend to the following particulars: whether the separated matter be slippery between the fingers, or whether it can be drawn in threads. Besides, the presence of mucilaginous matter in some bodies, such as the orchis, marshmallows, &c. may be readily discovered from their farinaceous nature, as well as by gelatinous solutions of them, made in simple water.

F. The presence of *albuminous* matter in vegetables, may be ascertained in two different ways, according as they are in a *fresh* or *dried* state. In the former it is only necessary to bruise a small quantity of the substance under experiment, to express the sap, to filter it through paper, and to divide the clear liquid into two parts; one of these parts is to be mixed with half its quantity of alkohol, and if no turbidness or precipitation take place, we may be convinced, that it contains neither matters of gum, mucilage, nor albumen. But if the liquor should become turbid, this circumstance may indicate the presence of either albuminous, gummy, or mucilaginous ingredients. In this case, the second portion of the clarified sap ought to be heated to the boiling point, and if it contain any albumen, it will be separated in small flakes, resembling those formed by boiling the white of eggs

eggs in water to a hard consistence, and emitting the smell of burnt horn. If on the contrary, dried vegetables be the subject of experiment, the substance ought to be previously extracted by means of alkohol, and afterwards by the conjoined agency of water and heat. Should ammoniacal or other neutral salts be contained in them, they will pass over into the latter solution. If the substance should contain albuminous matter, this may be discovered from the viscid and elastic nature of the vegetable fibre which forms the residuum: in a perfectly dry state, this residuum, if placed on red-hot coals, acquires a hard horny form, and emits the empyreumatic smell of horn.

G. If we surmise the existence of *elastic gum* as a part of a vegetable body, it ought to be treated in the manner before mentioned, first, by alkohol, and then by water; the residuum ought afterwards to be well digested in double its quantity of rectified *petroleum*, or of *vitriolic ether*. This solution must be mixed with an equal part of alkohol; in that state it either remains unchanged, or a precipitate is formed, consisting of a viscid greasy substance, which takes fire upon being exposed to a candle, and emits the smell of burnt bacon; in this latter case, the inflammable substance is the elastic resin, the presence of which was designed to be discovered by the experiment.

H. The matter of *wax*, as forming an ingredient in many vegetables, is discoverable partly from their shining surface, partly from a certain flexibility in such bodies. In order to ascertain its presence, a sufficient quantity of the substance under experiment ought to be infused in four times its weight of water of pure ammonia, or *caustic spirit of sal ammoniac*, and kept for some time in a state of digestion. After sufficient maceration, the liquor is carefully expressed, filtered, and mixed with such a quantity of distilled vinegar, as may render it a predominant ingredient of the compound. Thus a pale yellow powder is precipitated, which frequently consists of a combination of waxy and resinous particles. If this powder be infused in alkohol, the resinous parts will be completely dissolved, while those of wax remain behind.

I. The *astringent principle* may be readily discovered. A few drops of spirituous or watery extract of a vegetable substance, should be poured into a glass vessel, containing distilled water: to this mixture a drop or two of a solution of the muriat of iron, should be added and stirred up with it. By this addition the astringent principle will immediately shew itself, by changing the colour of the mixture to a black or reddish brown.

K. Although the *acrid* or *pungent principle*, cannot always be discovered by the taste and flavour of vegetable substances, yet it is not difficult to di[illegible]

m[illegible]

mine the presence of that principal, by distilling them in simple water. The product will thus manifest a considerable degree of pungency; and in [illegible] manner Professor Hermbstaedt was enabled to exhibit to the senses the [illegible]gent principal, as a constituent even of the lesser centaury. (*Gentiana* [illegible]*urium. Lin.*

[To be continued in the next Number.]

A comparative View of the principal Theories, which have prevailed in Chemistry, &c. By Dr. Frank, *Sen. of Vienna.*

[*Continued from Numb.* II. *pp.* 170—179.]

According to the ideas of Dr. Richter, *light* is compounded of caloric, and that basis which is an essential constituent part of all combustible bodies; the latter of these constituents, the author terms *brennstoff*, or the *basis of inflammability.*

The matters of *heat* and *light*, are, in his opinion, completely imponderable, and obey no laws of coercion. With respect to the former, he admits the principles established by the antiphlogistic system, in their full exte[illegible].

Light is generated only in the decomposition of combustible bodies. The basis of it is disengaged from these, dissolved or evolved in the matter of heat, and thus light is formed. This phenomenon, however, can take place only under the condition, that a *certain* and *determinate quantity* prevail in both elements. If this quantitive proportion does not subsist, for instance, if there be too little caloric, no light will arise, but merely heat.

Light passes through the pores of *transparent* bodies, without undergoing any change; but it is *decomposed* by the *opaque*. They absorb its basis and disengage the caloric, with which the latter is combined. Colours and their different shades depend upon the degree of this decomposition, or in other words, on the variously-modified proportion subsisting between caloric and *brennstoff*.

Vital air consists of a *peculiar substance*, rendered elastic by means of caloric. Besides this elastic form, vital air, as well as the basis of light, and *brennstoff*, can be obtained only by uniting with other bodies, which the author terms, *substrata*. In combination with *nitrogen gas* (azote) it forms atmospheric air. The nitrogen gas is the base or matter of *nitra*, rendered elastic

elastic by caloric, which matter again consistsof a *peculiar substratum*, and the *basis of light*.

The *hydrogen gas* likewise consist of a substratum combined with *bre[illegible]n* and *caloric*.

Water is compounded of the *base* of *vital air* and the *substratum of* [illegible] *gen*; it is produced when both substances are together subjected to [illegible]mation in a gaseous state. The *brennstoff* of the hydrogen gas then enters into combination with the caloric of the vital air, and forms light; thus the substratum of the former, and the basis of the latter, become liberated, and unite in forming water.

A similar double elective attraction takes place in every process of combustion. The *brennstoff* of combustible bodies, always combines with the caloric of vital air (by which alone the decomposition of these bodies is practicable) and produces free light; but the substrata of combustible matters enter into union with the basis of vital air, a process by which the *mineral acid waters*, as well as the *calciform metals* are produced, the weight of which uniformly corresponds with the weight of the bodies subjected to combustion, and that of the vital air thus decomposed.

In this manner, from a combination of the *basis of vital air*, with the *substratum* of *carbon*, *sulphur* and *phosphorus*, arise the *carbonic*, *sulphuric*, and *phosphoric acids*; as, on the contrary, by the *substrata* of *metals*, are generated the *metallic calves*.

Combined with the *basis of nitra*, the *basis of vital air* generates the *nitric acid*: with the *basis of muria*, the nature of which has not yet been discovered, the *muriatic acid* is produced.

All substrata which, by their combination with the basis of vital air have been dephlogisticated, or deprived of their inflammable base, again return to their pristine state; if in an elevated temperature, a phlogisticated substratum be brought in contact with them, that is, such a substratum as has a greater affinity with the base of vital air than with that of light. The substrata exchange the base combined with each, and assume new forms. Such is the case in the regeneration of sulphur and phosphorus from their acids, as well as of the metals from their oxyds containing vital air, (semi-acids,) by treating them with carbon. This substance imparts its inflammable basis to the substrata, and at the same time unites with their basis of vital air, whereby it is changed into *fixed air* (carbonic acid gas).

From the same cause, we can account for the decomposition of water. The carbon deprives it of its base of vital air, and imparts its base of light to

to the subtratum of hydrogen. Thus arise the carbonic acid and hydrogen, both which obtain their gaseous form, by the caloric disengaged in this process.

Some metallic substrata, however, combined with the base of vital air, are capable of decomposing light, in an elevated temperature; of fixing its base, and thus of reassuming the metallic form: of this nature for instance are the oxyds of mercury; the base of vital air disengaged on this occasion must necessarily appear in the form of gas, because it is rendered elastic by the caloric there present *.

This concise outline of Dr. Richter's system will be sufficient to afford the reader a specimen of his ingenious method of reasoning. Some learned German chemists, indeed, have already paid homage to this new system, among whom we observe the names of GREN † and LEONHARDI. This circumstance, however, will not readily induce the adherents of the anti-phlogistic school to adopt Richter's new system of chemistry; nor is it probable, that the followers of Lavoisier will be easily persuaded to desert the standard of the French school.

Among the rational sceptics in chemistry, Professor GOETTLING, of Jena, stands conspicuous: he is equally dissatisfied with the system of Richter, and that of Lavoisier, for explaining the phenomena of light. The observation, that phosphorus emits light in azotic gas, and is changed into acid, induced him to make numerous experiments on this subject, from the results of which he draws the following conclusions, and thus attempts to settle the difference between the two systems.

The phenomenon of *light* depends on the liberation of a *peculiar element*, which he terms *lichtstoff*, or the basis of light.

This substance is a *constituent part* of all *inflammable* bodies.

Combined with *caloric*, which the author conceives according to the definition given of it by the antiphlogistic school, but terms *basis of fire*, he affirms that *lichtstoff* forms *fire*.

Oxygen is not only evolved after being rendered elastic, by the influence of *caloric*, but likewise appears in a gaseous form, combined with *lichtstoff*. To the former combination (oxygen gas) he gives the name of *pyrogen* air; the latter (azote) he terms *lichtstoffluft*, or *luminating air*. And from a mixture

* *On the Modern Objects of Chemistry.* By I. B. RICHTER. (in German) No. 3. 8vo. *Breslau and Hirschberg*, 1793.

† *Manual of Chemistry.* Second Edition, 4 vols. 8vo. Halle, 1794.

mixture of these two substances, he accounts for the composition of atmospheric air.

With *hydrogen,* (which, when combined with *lichtstoff,* appears in the form of *hydrogenous gas*) *oxygen* produces *water*—an hypothesis also consistent with the principles of the antiphlogistic system.

With the *bases* of *carbon, sulphur,* and *phosphorus,* (which, in combina[illegible] with *lichtstoff* constitute *carbon, sulphur,* and *phosphorus*) Goettling en[illegible] vours to demonstrate the composition of the *carbonic, sulphuric,* and *pho[illegible]* *acids.*

Nitric acid is, according to him, produced by an intimate combination of the *bases of nitra* with the respective *matters of light* and *heat.*

The *muriatic acid,* as well as the *pure vegetable alkali,* apparently consist of the same elementary bases as the nitric acid, but united in *different* proportions.

The *vegetable acids* have a *saccharine matter* for their base, which acquires the nature of an acid, by being combined with *oxygen.*

Metals consist of a peculiar metallic base and *lichtstoff.* By their combination with oxygen, which they are capable of absorbing in a greater or less proportion, they are changed into calces.

Fixed alkalis and *earths* are substances which *cannot be decomposed.*

All combinations of *oxygen* and *lichtstoff* take place, according to a double elective attraction, of which combustion affords an example. While the combustible body attracts the oxygen from the pyrogen air, its *lichtstoff* combines with its pyrogen base, and appears in the form of fire. The combustible body itself acquires that proportion of weight, which is equal to the weight of the pyrogen gas that has escaped, and is changed either into water, acid, or metallic calx.

But it is equally possible that, during the saturation, mere light and no sensible heat should be produced. Such is the case with phosphorus, when placed in *lichtsoffluft.* It deprives this luminating air of its oxygen, by reason of its greater affinity to the latter, and is changed into acid. Thus, the matter of light contained in both is disengaged, and appears now in the state of uncombined, or free light.

Bodies combined with oxygen are deprived of that substance, when they meet, in a higher temperature, with such a *tertium* as manifests a greater elective attraction for oxygen, than for matter of light; as for instance, carbon. Its elementary base unites itself to the oxygen of the water, the acid,

acid, and imparts its *lichtstoff* to the elementary base of these combinations. They now return to their pristine state, but at the same time suffer that diminution of weight, which their oxygen before possessed*.

The facts on which Professor Goettling endeavours to establish his propositions, are unquestionably of great importance; and it is probable, that his theory, as it does not wound their national pride, will meet with a favourable reception among the German chemists.

Time, the great improver of all discoveries, multiplied and careful researches, and unequivocal facts alone, can decide which of the systems we have now reviewed, is intitled to the greatest share of *probability*: for, in this instance, we cannot arrive at demonstrative *certainty*.—Let it suffice, that we have here exhibited the outlines of those systems. This, it will be readily conceived, has not been done with a view to improve the experienced chemist, but to instruct the physical student.

Dr. Frank concludes this part of the subject, by observing, that he was induced to compose the present treatise, in consequence of the repeated wishes of his own pupils, as well as of a numerous branch of the professors of pharmacy, many of whom are little acquainted with the laws and systems of chemistry; and who all complained of the want of a sufficiently concise and perspicuous view of the different chemical systems.—"Nobody," says he, "can be more sensible, than I am myself, of its imperfections; but the general nature of the view I meant to give, induced me to confine it in this narrow compass, and rather to incur the blame of being too brief, than too diffuse. A more particular account of the antiphlogistic system would not have enabled the general reader to form such an idea of it, as to understand and compare it with the systems I have yet to delineate."

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* "Contributions to the improvement of the Antiphlogistic System of Chemistry:" By I. F. GOETTLING, 8vo. *Weimar*, 1764.

(To be concluded in the next Number.)

HINTS AND IMPROVEMENTS

IN THE PRACTICE OF

MEDICINE AND SURGERY.

On the febrifuge Virtues of Lime, Magnesia, and alkaline Salts in Dysentery, Yellow Fever, and Scarlatina Anginosa.

FROM a letter of Dr. J. BARKER, dated Portland, (Maine,) America, May 30th, 1798, and inserted at full length in the "*Medical Repository*," Vol. II. No. II. we are happy to communicate to our readers the following important facts:—

"From the middle of August to the first of October, an epidemic fever, attended with dysentery, was very prevalent in several towns. Adults were more frequently seized with it than children.

"The disease was ushered in with pain in the abdomen, frequent stools, nausea or vomiting, chilliness succeeded by heat, and great prostration of strength. The stools were deeply tinged with blood, and very fetid. The matter rejected from the stomach was of a dark green colour; its taste is described to be like that of tartar emetic. A considerable fever and thirst constantly attended. The pulse was quick and weak, though, during the exacerbation, which happened about once in twelve hours, large and full. The violence of the disease continued from one to two weeks, according to the means used for its amelioration. Thirty severe cases, besides several gentle ones, fell to my share. I lost only one adult, to whom I was called at a late period, and two children, where very little medicine could be administered.

"The mode of practice which I pursued, was to cleanse the stomach with ipecacuanha, and the intestines with rheum and sal absinth. or sal. cathar. with sal absinth.—Lubricating oils and mucilages were occasionally employed, as also enemas. But the remedies, which I depended on to counteract the noxious cause, were *alkaline salts and earths*. My common prescription was:—aq. calc. one pound, sal absinth. two drachms; the dose from one to two ounces every hour, and in some cases every half hour or oftener, in an infusion of flor. chamæm. Besides this, I used testa. magnes. or creta, frequently, from one to two ounces in twenty-four hours. Calcined oyster-shells were sometimes employed, from two scruples to one drachm the dose.

"This

"This fever generally subsided in ten or twelve days, where alkaline remedies were employed; but where they were not used, it was frequently protracted to twenty and sometimes thirty or more days, and then the patients seldom recovered."

After having cited several successful cases, Dr. Barker thus proceeds:— "The recovery of these patients served more fully to establish the credit of a mode of practice, which had been judged by some to border upon rashness, viz. exhibiting alkaline salts and lime water in fevers*. During the months of November, December, January, February, and March, the fever which still continued, was attended, in most cases, with a scarlet efflorescence and sore-throat. It prevailed in almost every town in the county, and was mortal in many instances.

"The disease was ushered in with the usual symptoms of nausea or vomitting, chilly fits, succeeded by heat, &c. The throat soon became inflamed, which in a short time put on a gangrenous hue, and the breath was very fetid. In some cases, the throat was swelled to such a degree, both externally and internally, that deglutition and speech were almost entirely prevented; but there was no uniformity in the symptoms. In some there was no sore-throat or eruption: in three cases which I saw, the virus was turned upon the renal glands, producing bloody urine, mixed with skinny filaments, and attended with great pain, heat, and anguish. In others there was distressing pain in the bowels, and thirst for water,

"After cleansing the stomach and intestines, my efforts were particularly directed to counteract the virus, or noxious cause. To effectuate this important purpose, alkaline remedies were liberally employed, and their good effects were very apparent.

"Besides these, oils and mucilages were used to advantage. The mouth and throat, when particularly affected was gargled with lime-water. This was evidently beneficial. It was as congenial to the ulcers and sores, as it is to ulcerations upon the external surface. Epsipastics were applied to the neck, with a view to unload the glands of accumulated poison. The blisters produced a great discharge, and were very sore, attended in many instances with intolerable itching. A lotion of lime-water readily allayed this itching,

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* The saline mixture and spt. mind. have ever been considered as safe and efficacious medicines in fevers: but we never suspected their efficacy depended upon any alkaline power that was exerted after saturation, and our ignorance in this respect, we presume is not very singular.

Note of the American Editors.

itching, and disposed the sores to heal, which in some cases appeared gangrenous.—I was called to two cases, which terminated fatally. These were all that I lost, out of more than fifty in this distemper.

"In one of these fatal cases, that of a child, four years of age, who died on the ninth day of the disorder, upon dissection, the inside of the stomach was found red and inflamed; the texture of the villous membrane destroyed, grumous blood appearing in its stead. A black liquor was also contained in the stomach, which was in a contracted state. No marks of inflammation appeared in the intestines; they contained a yellowish fluid, and were distended with air. The omentum was considerably wasted, and of a red colour. No other morbid affection could be discovered.

"I dissected a woman, some years since, who died of a puerperal fever, and found the stomach in a similar condition with the child inspected. I saw another puerperal subject dissected, where the rectum was also corroded and partly destroyed. I then accused the *bile* of being the mischievous cause; but I now believe that the ravages made in the stomach, intestines, throat, or other parts, must be imputed to the *septic acid*; and I am fully persuaded that a seasonable and liberal use of *alkalines*, in all these different species of fever, are especially indicated. Indeed, I conceive no other medicine that can, with any measurable degree of propriety, be denominated febrifuges.

"For nearly three years I have pursued this mode of practice in febrile diseases, and have kept exact records of cases; from which it appears, that *I have not lost a single patient*, where these remedies have been particurly employed *from the commencement of the fever*.

"I found that opium and spirits could be borne only in very small quantities in these fevers, especially in the first stage; and when the morbid excitement was considerable, they were evidently injurious. Wine was offensive to most stomachs; and the bark was by no means congenial. Mild bitters in decoctions were generally agreeable. Rice and Indian gruel were the most grateful articles of diet."

In concluding this interesting paper, we cannot omit to mention that Dr. Barker promises, "before long," to publish a particular account of these febrile distempers, as they have appeared in America, for a few years past, together with such observations as may be productive of public advantage.

Electricity

Electricity employed to discover and destroy the Tape-Worm.

IN our last Number, p. 186, we barely mentioned that Dr. FRICKE of Brunswick, had lately made several successful experiments, not only to discover that unwelcome visitor the *tape-worm*, but likewise to destroy and expel it, by the powerful aid of electricity. The proper application of the electric fluid, according to the account of Dr. F. almost instantaneously relieves the most violent symptoms, such as anguish, oppression, spasmodic stricture in the præcordia, &c. The manner of applying electricity to individuals suspected to be harrassed by the tape-worm, is as follows:

Dr. F. uses a conductor with a globe of two inches and a half in diameter, from which he causes the sparks to strike against a globe of an insulated *scintillometer*: these sparks he passes in different directions through the abdomen; but, at first, admits them only from three to four inches long. As soon, however, as the patient can conveniently bear this kind of vibration, sparks to the length of from ten to twelve inches are admitted: and the more powerful these are, the more speedy will be the relief.

Dr. Fricke's scintillometer consists of a metal cylinder, thirty inches long, which lies insulated upon a pedestal, in a horizontal direction: it is divided into inches, and may be slided backwards and forwards. On one extremity this cylinder is provided with a brass globe, four inches in diameter, on which the sparks strike from the conductor: the other extremity is provided with a ring. To this ring he fastens a metal chain or wire, covered with silk, which is connected with an insulated director. Another director, likewise insulated, is added, by means of a chain to that part of the machine which performs the friction: and by these two directors, which, for the sake of conveniency, are conjoined like a pair of tongs, the passage of the sparks is constantly regulated, while the patient sits on a common chair.

As the symptoms of the tape-worm usually begin with severe tension and p[illegible]on about the region of the stomach, the first sparks are directed through the pit of the stomach, in a straight line towards the vertebræ. After several sparks have been administered, eructations frequently take place; the patient feels much relieved in that particular part, but generally perceives the motion of another part of the worm, in some other place. Thither the sparks are again directed, and the worm is incessantly pursued, until it can be distinctly felt by the patient like a heavy weight.

To a lady who had been much troubled with the tape-worm, Dr. Fricke prescribed half a drachm of powder of jallap, and carefully applied the electricity

electricity in the manner before described, during the operation of this remedy: in consequence of such treatment, the patient discharged a tape-worm upwards of twenty yards long. With respect to the necessary precautions in the use of electricity, in general, we refer the reader to IMHOF's Remarks upon this subject, an abstract view of which we have given in the first Number of this Journal, pp. 55 and 56.

On the Medicinal Properties of the Datura Strammonium.

IN our first Number, page 84, we gave a cursory account of the extraordinary effects of the *thorn-apple* on the human body, when taken internally; as stated by Dr. DE WITT, physician in the city of Albany, America:—at present, we shall furnish the reader with the substance of the "*medical observations on the virtues and properties of the seeds of the Datura Strammonium,*" as described by another medical practitioner, Dr. ALEXANDER KING, of Suffield, Connecticut.

The seeds of this vegetable are, so far at least as Dr. King has made observations upon it, the only parts useful in the Materia Medica; as they contain all the virtues of the plant, refined and prepared by the hand of nature.

These seeds, by expression, yielded a mucilaginous oil, which, when externally applied, is cooling, anodyne, and repellent. The virtues are readily obtained by decoction, in an aqueous menstruum. Half a drachm of the bruised seeds, boiled in four ounces of water, until half the quantity be evaporated, is a suitable portion for an adult in twenty-four hours, to be taken in divided doses.

An extract may be obtained by boiling any quantity of the bruised seeds in a convenient proportion of water, for the space of four hours; then strain off the liquor by pressure; evaporate it over a gentle fire, without taking the scum, until it have acquired the thickness of a syrup; then remove the liquor from the fire, and place it in a warm oven, in an earthen glazed vessel, until the aqueous parts be evaporated, and it become of a proper consistence for use. The dose is from half a grain to one grain for an adult.

The operation of this medicine, when taken in small doses, is moderately diuretic, and impregnates the urine pretty sensibly with the smell of the seeds. It is cooling, anodyne, and sedative. It relaxes the tone of the solids, lessens the contractile force of the arterial system, and consequently moderates the violent attrition of the circulating fluids against their containing vess-

low

lowers the pulsation of the arteries, and renders the pulse slower, more uniform and equable, when excited by violent stimuli. If taken in large doses, it produces the following symptoms: the first sensible effect is in the sight; there appears a preternatural dilatation of the pupil of the eye; vision is rendered indistinct and confused; objects appear multiplied, diversified and variously coloured; the patient complains that he cannot see clearly; he cannot discern a small object, such for instance as the point of a pin or needle; he sees in the room objects which do not exist, and complains of a numbness of the head, attended with vertigo. It also affects the organs of speech. He faulters in pronunciation; his tongue is rendered paralytic; or when he attempts to put it out, he imitates the motions of a person who tries to do the same in a nervous fever. The whole nervous system is disordered; various parts of the body become paralytic. From the senses it extends its influence to the mental faculties. The imagination is confused and disturbed with fear. Terrifying apprehensions perplex the mind, and impress on the countenance the image of this passion. These symptoms all disappear, without any medical assistance, in the space of twenty-four or forty-eight hours, sooner or later, according to the degree in which they prevailed.

Dr. King then relates two cases of phrenitis, or rather inflammation of the meninges of the brain, in both of which he prescribed the decoction prepared of the seeds of the datura, with uncommon success; and, particularly in the second case, he expresses himself in the following terms: "In this case I had a fair opportunity to observe the action of the medicine, *in an early stage of the disease*, which was cooling, anodyne, and sedative." He also informs us, that he has used this decoction of the thorn-apple in two other cases of the same disorder, with equal success; and, in one instance, without any advantage; but, in that case, a general torpor or insensibility had taken place, before he saw the patient, who consequently died the next day.

This remedy has been further recommended as a remedy for epileptic fits: in which disorder Dr. King has sometimes prescribed it, but without any apparent success. According to his observation, the chalybeates afford a much more efficacious remedy in that disorder.

Carbon, a new Remedy for habitual Costiveness.

IN the '*Medical Repository,*' conducted by Drs. MITCHILL and MILLER, we find, that simple carbon or charcoal, deprived of its oxygen by heat, has been administered in the New-York Hospital, in fifteen or twenty cases. In no instance has it failed to purge, and in several the purging and intestinal commotion

commotion excited by it, have been so great, that it became necessary to discontinue it. Combined, however, with carbonat of soda (*sal sodæ*), and particularly with the addition of lenitive electuary, It has proved one of the gentlest and most efficaceous remedies for the removal of habitual costiveness that is yet known. It is further stated, that this combination has probably had other and more salutary effects, in a few cases of scrophula and consumption, in which it has been administered. But further and more accurate observations are necessary to determine this point.

The following formula is that used in the New-York Hospital. Take of lenitive electuary, four ounces; carbonate of soda, two drachms; and carbon, two drachms. Of this mixture, from half an ounce, to one and two ounces, are to be taken, twice, thrice, or oftener in the day, according to circumstances.

Hydrargium phosphoratum, a powerful new Remedy in the secondary Stages of Syphilis.

[Extracted from the 'Journal of Inventions of Gotha,' No. II.]

THE phosphoric acid enters into no combination with mercury in its metallic state. But if the mercury be previously dissolved in nitric acid, and if the phosphoric acid, in a liquid form, be dropped into that solution, a white precipitate is formed, which is a true metallic neutral salt, consisting of a combination of the phosphoric acid and mercury.

Although the phosphat of mercury has long been known as a chemical preparation, yet its practical application has been little, if at all, attempted. BERGMAN, in his physical and chemical tracts, gives the following directions for preparing this active medicine:—Eight ounces of vitriolic acid are carefully and well mixed with four pounds of water, in a capacious glass vessel; to this mixture must be gradually added fourteen ounces of white calcined bones, reduced to powder. The vessel ought then to be placed in a temperature of about 60° for three days, that it may gently digest; during which time it ought to be frequently stirred with a glast rod. Then the whole should be filtered through fine linen, the fluid part saved in a separate vessel, and the residuum washed in distilled water, till it be completely edulcorated. The liquor contains the phosphoric acid, separated from the bones by means of the vitriolic acid, but in a state not entirely free from gypsum. This liquor must be evaporated to dryness, and the residuum dissolved in the smallest possible quantity of luke-warm water, when a considerable portion of gypsum will remain undissolved. After straining off all the liquor, it must

again be diluted with distilled water, and a solution of the purest potass added to it, until it be completely saturated. Thus the small portion of gypsum still held in solution will be decomposed, and some calcareous earth be precipitated, which must be separated by filtration. The liquor then ought to be evaporated to a proper consistence, and exposed in a cool place for crystallization. At first appears a small portion of vitriolated tartar, which originates from the decomposition of the gypsum; but if the liquor be again evaporated, the phosphorated vegetable alkali will be produced in rhomboidal prismatic crystals. These should be again dissolved in distilled water, and afterwards decomposed by a supersaturated solution of mercury, in the nitric acid. The precipitate thus obtained, after having been completely edulcorated, by repeated affusions of warm distilled water, should be slowly dried. By this process, if the directions given be properly attended to, the product will uniformly be the *purest phosphat of mercury*.

This extremely active mercurial preparation, however, unless it be administered with great caution, is very apt to produce nausea, violent vomiting, ptyalism, and other disagreeable symptoms, even when taken in doses not exceeding half a grain.—With a view to avoid such accidents, it has been successfully prescribed in the following formula:—Take of hydrargyrum phosphoratum, four grains; pulv. cort. cinnam. fourteen grains; sacchar. alb. half a drachm; the whole is to be divided into eight equal parts, one of which is to be taken every morning and evening, unless salivation take place, when it ought to be discontinued. Some patients, however, will bear from one to two grains of the phosphat of mercury, without inconvenience.

This remedy has been observed to heal inveterate venereal ulcers in a very short time, nay in the course of a few days, particularly those about the pudenda. In venereal inflammations of the eyes, chancres, rheumatisms, and chronic eruptions, it has proved of eminent service. Upon the whole, if used with the necessary precaution, and in the hands of a judicious practitioner, it is a medicine mild and gentle in its operation. The cases, in which it deserves the preference over other mercurial preparations, are these: in an inveterate stage of syphilis, particularly in persons of torpid insensible fibres—in cases of exostosis, as well as obstructions in the lymphatic system—in chronic complaints of the skin, &c. &c. It is perhaps unnecessary to add, that those who would rather hunt after species, than study the nature of diseases, and the constitutions of their patients, will be as frequently disappointed in the use of this, as in any other of their favourite remedies.

W.

A Proposal for a new Method of removing and curing Steatomatous Tumours.

As the extirpation of steatomatous and other indolent tumors, by an operation with the knife, is frequently attended with difficulty and danger, on account of more or less violent hemorrhages attending such operations, any other practicable method of removing them would be at once acceptable and beneficial to the practice of surgery.

In the '*Gotha Journal of Inventions*,' No. XII. we meet with an account given by Professor WIMMER, of the university of Graetz, in Styria, relative to this subject, which appears to deserve the serious attention of every surgeon. The case related by the Professor is not a little extraordinary. The tumour was situated on the neck of the patient, far exceeding the size of the whole head, and amounting to the almost incredible weight of from sixteen to eighteen pounds. Mr. Wimmer introduced a seton through the middle of this tumour, which, in the course of a few days, produced inflammation and consequent mortification; so that large pieces of the substance of the mass were gradually separated, until the whole was entirely removed, and the patient completely recovered.

We regret that our limits do not admit of stating the particulars of this interesting case, which the author has described pathologically, in a separate pamphlet, in German, to which we refer the curious reader, and which is intitled, "*History and Cure of a remarkable steatomatous Tumour on the Neck*; by J. WIMMER, 8vo, *Grätz*, with a plate."

In justice, however, to the injenious author, we shall further remark, that besides the remarkable case before alluded to, he has treated *four* other patients afflicted with steatomatous tumours in a similar manner, and with equal success. Hence he draws the following conclusion, "that in large steatomatous tumours, which obviously contain fat, a mortification of the substance ought not to be considered as an alarming symptom, but rather as the most certain and favourable termination of the complaint; pro[vided] the patient possess sufficient strength to undergo the natural process of s[ba]celous separation, and that his fluids be not in a contaminated state."

Although we are not very sanguine in our expectations, that this p[lan] will prove successful in every case of steatomatous excrescence, o[r th]at [it] would even be adviseable to recommend that practice *indiscriminately* [in all] cases of this nature, yet we consider Mr. WIMMER intitled to some share [of] credit, for an attempt equally bold and ingenious.—If we were allowe[d] ... t[o]

to suggest a remark, on this occasion, it would not be such as to induce practitioners rashly to undertake this operation on tumours of this or a similar kind.

As the vitriolic ether is, of all the fluid substances, the best calculated to produce the greatest degree of cold during its evaporation, and as this extremely volatile agent has been observed to be of eminent service in the reduction of encysted hernia *, if carefully poured on the affected and surrounding parts of the rupture, it is not unreasonable to conjecture, that a *timely* local application of the ether might be attended with equally happy effects in the removal of steatomatous tumours. We wish, however, that this suggestion may not be misapplied, by inducing the inexperienced practitioner to trifle with so formidable a disease; as we are well persuaded, that no external application will be powerful enough to cause the absorption of a tumour which has *gradually* arrived at a considerable size.

Miscellaneous Facts and Remarks.

MUCH has been said and written within the last fifty years, on the internal use of *phosphorus*, and its medicinal properties. We think it needless to waste much room and time on a substance, which has been as frequently recommended at it has been forgotten, and placed on the condemned list. To satisfy our readers, however, respecting the nature and effects of this powerful remedy, we shall briefly extract the opinion of an esteemed modern writer, Dr. GESENIUS, from his excellent "*Manual ef Therapeutics*," in German, 8vo. 1796. "This substance," says he, "physicians have again lately ventured to prescribe; they have praised its success in different cases, and again remained silent respecting its further use. According to the observations of respectable practitioners, it cannot be denied, that phosphorus possesses a peculiar power of exciting and animating the nervous system. It has been asserted, that in doses of two, three, or more grains, it has been productive of salutary effects in the most critical cases of putrid typhus fever, nervous apoplexy, gout, and epilepsy. As it cannot be administered in substance, on account of its burning quality, it has been dissolved in oil; and, probably with a view to increase its strength, some of the water in which it was preserved, has been added to the solution. In my opinion, it is a medicine we may dispense with, as we possess other *more safe* nervines. I feel no inclination ever to employ this remedy, notwithstanding the regard I profess for

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* Vide "Dr. Duncan's Annals of Medicine," Vol. VII. for 1792.

for those who recommend it; and any person who is still anxious to try the effects of phosphorus, I would advise previously to consider what WEIKARDT, from his own experience, has ingeniously communicated to us, respecting the use of it, in his "*Miscellaneous Medical Writings*," in German, No. IV. p. 105, *et seq.* The best writers on this subject are, "A. VATER, *respond. Mentz,* Dissertatio de Phosphori medicamenti loco assumpti virtute medicâ." *Vitemb.* 1751.—and "T. JOSEPHI Dissertio de Phosphori usu interno." 8vo. *Helmst.* 1789.

Nausea and *vomiting* are frequently distressing symptoms during pregnancy. Any remedy, therefore, calculated to relieve, or at least mitigate, such complaints, must prove highly acceptable both to the general and professional reader. Dr. MARCARD, physician to the Court of Oldenburg, and author of a classical work, "*On the practical use of baths,*" published about four years ago, in the German language, advises pregnant women to drink simply the *acidulated mineral waters,* particularly that of *Seltzer.* Dr. M. accompanies this advice with the following remark: "Although it produce only a palliative cure, yet, as the remedy can be as often repeated as there is a necessity for it, and as these symptoms are limited to females in a certain state, the relief thus afforded is of equal benefit as if it performed a radical cure." We shall only add, that a *radical cure,* in this instance, is not within the power of art, as the cause of the complaint cannot, or ought not, to be prematurely removed.

Professor HUFELAND, of Jena, strongly recommends the use of *narcotic remedies* in *chronic inflammation of the eyes,* especially in children. "It is of the greatest importance," says he, "in his valuable work, '*on infantile disease*' "to pay particular attention to the increased and preternatural irritability the diseased part, in the chronic, and particularly in scrophulous opthal of children; for this irritability alone may, even after the material cau removed, occasion considerable pain, spasmodic stricture, and inflamma Nay, the cause itself frequently cannot be removed, until the spasr relieved by such anti-spasmodic remedies which, in a manner, blunt reduce the sense of feeling. Even mercurial remedies, when exhibited such cases, with a view to suppress the cause of the malady, frequent operate as new stimuli, unless they be rendered milder, more congenial to the constitution, and consequently more salutary, by combining them with narcotics,"—The Professor relates a case of violent humoral opthalmia in a child, whose eyes were so completely closed, that they could not be opened by external force. He directed frequent poultices, consisting of the leaves

of hyoscyamus boiled in milk, to be applied to the eyes, and repeated mercurial laxatives to be taken internally. The patient discharged a number of worms, and the inflammation of the eyes entirely subsided. The eyes opened spontaneously, and, excepting a slight dimness, completely recovered.

The same author describes an extraordinary case of cancer on the lip of a scrophulous boy, eleven years of age, who, when two years old, bit his under lip in a fall, so that a small nodule appeared at first, which in process of time degenerated into a *confirmed cancer*. With this child all the quacks and old women of the neighbourhood had tried their schemes, when he was submitted to the medical treatment of Hufeland. After having prescribed the belladonna, rhubarb, camphor, cicuta, antimony, and mercurial preparations, with little or no effect, the professor at length directed him to take fifteen drops of the *volatile spirit of sal ammoniac*, much diluted with water, three times a-day, and to increase the doses with four additional drops every day. At the same time, he ordered him to drink a decoction of the young sprigs of the pine-tree, (turion. pini—an excellent antiscorbutic and antiscrophulous medicine,) together with a tea-cupfull of the freshly expressed juice of carrots, every morning, and to make use of a luke-warm saponated bath, every other day. Besides these, a solution of one scruple of antim. tartar. in four ounces of water, was prescribed, of which the patient, frequently through the day, took a little at a time in his mouth, and moistened with it the affected part of the lip. "This solution," says Mr. H. "externally used, is an active resolvent and stimulant remedy, from the immediate absorption of which, by the lymphatic vessels, I promised myself great benefit."

Scarcely had these remedies been regularly continued for four weeks, when an obviously favourable change took place in the disorder; the scirrhosity became softer and smaller; the scabs began gradually to diminish, and the diseased parts became more even and smooth. The dose of the ammoniacal drops was increased to forty, taken three times a-day, without the least inconvenience; and after having duly persisted in the use of the remedies for *three months*, the cancerous lip was reduced to its natural state and all other callosities about the glands of the neck, had completely disappeared.

Professor THUNBERG, the celebrated Swedish traveller, has enriched the materia medica with a remedy which deserves the attention of practitioners, in a more than ordinary degree, and which has been found to possess pre-eminent virtues as an anodyne, antispasmodic, and stimulant. We allude to the *oil of cajeput*, a substance which, although introduced into several

several modern pharmacopoeias, is so little employed in actual practice, that it is scarcely known by name to most medical men, and is still more rarely kept in the shops, even in the metropolis.

According to the observations of Thunberg, who is a man of unquestionable authority, this oil has been successfully prescribed in chronic *inflammations of the eyes.* He directs a few drops of this volatile substance to be poured on a [illegible] white linen cloth, which are allowed first to evaporate, while held pretty close to the eyes, and afterwards the same cloth is to be tied over these organs during the night.

In the *gout,* as well as in *acute rheumatism,* it has proved of immediate service, by anointing the affected part with this ethereal oil, which has a remarkable tendency to open the pores, and dissipate, in the words of the professor, " the arthritic and rheumatic matter."

In violent *head-achs* it has sometimes afforded speedy relief, by rubbing the temples with it, and inhaling it through the nostrils.

In cases of *tooth-ach,* from whatever cause, says Thunberg, the affection may proceed, whether from a carious hollow tooth, or rheumatic acrimony, catarrh, &c. the cajeput oil has generally been efficacious in removing the complaint, if dropped on lint, and placed in the cavity of the tooth, upon the tooth itself, or even at she side of it. Although these accounts may appear somewhat exaggerated, yet, in several cases of odontalgia, and acute rheumatism, we are from experience convinced of its happy effects.

From a dissertation on the *sick head-ach,* read before the Medical Society of Hartford county, Connecticut, by Dr. Nathaniel Dwight, we extract the following particulars:—After noticing the general silence of medical writers on this subject, and remarking that Dr. Fothergill alone has formally considered it; that the sick head-ach is a disease of uncommon severity, and generally supposed incurable; that therefore a remedy adequate to its radical cure must deserve to be highly valued; and that the efficacy of the one which he shall propose can be verified by many persons, and in particular by Drs. Fish and Cogswell, of Hartford, America, the author gives an accurate pathological description of this malady, which however our limits do not admit to be inserted, so that we must immediately proceed to the practical part of this treatise.

In discoursing of the method of cure, Dr. Dwight maintains, that "*vegetable acids* in a supereminent degree, correct the *(morbid)* acid of the stomach." Mineral acids, he admits, possess a share of this property, but in an inferior degree.

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The next object of inquiry is, what vegetable acid is preferable to all others? and in what form?—In answer to this Dr. Dwight declares, that ample experience has established the superiority of the *malic acid*, or *cyder*, over every other: and he points out a remedy and mode of cure, equally remarkable for simplicity and efficacy. For this purpose, cyder must be well gone through the first fermentative process, and no farther. It ought to be free from all taste of the cask, and all other impurities. A quantity of it, from half a gill to half a pint, should be drank on an empty stomach, in the morning, from five to fifteen minutes before breakfast.

The efficacy of cyder in the cure of the sick head-ach, leads Dr. Dwight to the mention of its success in the cure, or rather prevention of another disease, which he supposes depend on the same cause, the *bilious colic*. That the sick head-ach, and this species of colic, depend on the same cause, differently applied, he infers, 1st, from their affecting persons of the same temperament, the *bilious*; 2d, from their both observing similar periodical returns; 3d, from the circumstance of persons who, in the course of their lives, have been subject to both complaints for years, having uniformly experienced an exemption from one, during the prevalence of the other, alternately; and 4th, from the efficacy of cyder in the cure of colic, as well as head-ach. "The evidence of its efficacy," continues Dr. Dwight, is this: "The cyder has been drunk by persons for months together, with entire relief from the colic, who, before they began with the remedy, were subject to paroxysms of it every few weeks. After several months had expired, the cyder was laid aside, and the colic returned with as great frequency and severity as before. The remedy was resumed, and the colic again disappeared."

Dr. Edward Miller, of New-York, has lately published an elaborate "*Inquiry concerning cutaneous Perspiration, and the Operation and Uses of sudorific Remidies*," which we find inserted in the Medical Repository, Vol. II. No. I.—As this essay extends to a considerable length, we can at present only extract from it a few passages of a *practical* tendency, which we consider sufficiently interesting to engage the attention of the reader. After having ably commented on the great importance of the function he treats of, as well as the relation which the cutaneous perspiration bears to the critical solution of febrile diseases, Dr. Miller gives the following opinion on this subject, as the result of his enquiry.

"That sudorifics cannot be usefully employed as a general remedy in fevers, is apparent from the fatal course pursued by many of these diseases, notwithstanding the most copious, universal, and continued sweats, sponta-

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neously taking place. The memorable sweating sickness, which first appeared in England, toward the close of the fifteenth century, and was one of the most fatal epidemics on medical record, affords ample proof of this position.

"On the whole it may be concluded, that much of the use of sudorifics has arisen from mistaken doctrines, concerning the nature of perspiration and of fever, particularly from the erroneous opinions, that the matter of perspiration is excrementitious; that its occasional obstruction is noxious; that it ought, as much as possible, to be eliminated from the system; and that it is only carried off, in considerable quantity, when discoverable by sight or touch.

"It may be also concluded, that sudorific remedies, especially those of the more powerful kind, are, in general, highly unsafe, and calculated to augment the violence of inflammatory and malignant fevers; and, that though they may succeed in some cases of less violence, or by a favourable concurrence of circumstances, yet they are so constantly liable to produce mischief, and exasperate the disease, that the abuse, on the whole, must be pronounced greatly to overbalance the use."

Dr. Dewees, Lecturer of Midwifery in Philadelphia, has in the same periodical work, published some '*Observations on the use of the warm bath, in cases of laborious parturition;*' in a letter addressed to Dr. E. H. Smith, of New-York, lately deceased; from which the following passage we deemed worthy of being extracted;—

"The warm bath is by no means a new remedy in that species of labour, in which I have thought blood-letting of so much consequence. Few writers on the subject of midwifery have failed to mention it among other means to overcome the rigidity of the soft parts in laborious labours, that does not depend on a malconfirmation of the pelvis. The French accoucheurs, more particularly, make frequent mention of it; yet none of them, that I am acquainted with, have laid any particular stress upon its virtues in these cases, or place any great dependence on its effects. It has been rather recommended as a probable, than as a certain remedy, and stands upon much the same footing as opium—sometimes perhaps succeeding, but much more frequently failing. With me it has ever been of little or no consequence; nor can I obtain a more favourable character of it from the friends I have consulted. The result, then, of my experience, inquiries, and observation, may be reduced to three heads: 1. Its being almost always inconvenient; 2. Its being sometimes inelligible; and, 3. Its always being limited and uncertain in its effects."

Cit. Louis Valentin, of Montpellier, has communicated to the editors of the "*Medical Repository*," a conclusive answer to the question:—"*Whether any, and what, effect is to be attributed to the greater or less quantity of variolous matter introduced into the system by inoculation? &c.*" The substance of this answer we give in his own words:—

"I never perceived any difference, with respect to the intenseness of the fever, and the number of pustules, when I made many punctures, and introduced the greatest quantity of fresh matter I possibly could. Whether all the limbs, or several parts of them, be inoculated, at the same time, with the thin matter which first appears in the pustules, and has a more certain effect than that which is maturated, or whether only one puncture be performed, is a matter of indifference. I never make incisions: the inconvenience and trouble attending them being sufficiently known. I make punctures, and never draw blood.

"I do not think that a milder disease is communicated by diluting the variolous matter, which is not too old; for here is my dilemma: either the matter which is to be inserted has the requisite qualities or not. If it be liquid, just gathered, and immediately inserted—if the subject have all the necessary dispositions for the absorption and unfolding of the disease, one atom of virus only is as powerful as many drops, for the purpose of inoculation. If the dilution of dry and new matter be not in reasonable proportion, or if it be rendered too liquid with water, it may have no effect: likewise when undiluted, it is incapable of being absorbed; when too old, of acting, and producing the desired effect. But, in all cases, should the smallest particle imaginable be absorbed, it will be sufficient to put in motion what we call the disposition to that disease, as much as when a more considerable mass of matter is inserted. This may be easily conceived and illustrated by the following comparison: does not every one know, that one grain of powder set on fire in the pan of a gun, produces the explosion of the whole charge, as well as when the pan is filled with powder? Surely, the explosion in both cases is neither more nor less considerable; therefore, the quantity of inserted matter has no influence in producing the number of pustules."

We cannot better conclude this department of our Journal, than by giving the reader a concise view of a subject, which has lately excited considerable attention among the medical practitioners of this country. It will be readily conjectured that we allude to the use of the *digitalis* in the cure of consumption.

Dr. N. DRAKE, of Hadleigh, Suffolk, in a letter to Dr. BEDDOES, dated February 21, 1799, inserted at full length in a late publication, intitled, "*Contributions to Medical and Physical Knowledge, collected by Thomas Beddoes, M. D.*" has furnished us with several valuable "*Observations on the use of the Digitalis in Pulmonary Consumption, with two cases in which it proved permanently successful.*" After having prefixed a short medical history of the digitalis, Dr. Drake proceeds to state his views in prescribing this plant, in cases apparently desperate.

As our limits do not admit of long extracts, we shall only observe, at present, that, although we would not implicitly subscribe to the reasonings on which the indications of cure seem to be established, namely, "*that pus, when exposed to atmospheric air, rapidly attracts oyxgen; that an acid of a peculiar kind is generated; that hectic fever, the effect of the absorption of aërated matter, is produced: that as an ulcer of the lungs is perpetually exposed to a stream of air, and of course an ichorous poison continually forming by the union of oxygen with secreted matter, an important curative process would seem to arise, from promoting absorption so rapidly from the surface of the diseased parts, that the pus shall be taken up as soon as secreted, and consequently its combination with oxygen prevented:*" yet we cannot but with pleasure and satisfaction congratulate Dr. Drake, and the medical world at large, on the happy, and we fervently wish, *permanent* success, of this old, almost abandoned remedy, in conquering the most formidable, and hitherto supposed *invincible* disorder.

The preparation of the digitalis best adapted to that purpose, appeared to be the *saturated tincture*, of which Dr. Drake ordered to be taken at the commencement of its use, in the first case, only fifteen drops, twice a-day; and in the second, twenty: in the former, the dose was gradually increased to one hundred drops; in the latter to ninety-six,—"with safety; and in patients very debilitated, before either sickness or irregularity of the circulation proved; and even then, these symptoms appeared of little moment, as the first was speedily removed, and the second produced no inconvenience. During this period, all the symptoms of irritation and fever, cough, pain, and dyspnœa daily grew better, and at length altogether retired. On the quantity and quality of expectorated matter, the digitalis soon exerted a most remarkable effect, either promoting its absorption, or diminishing its secretion, or perhaps both, in a rapid manner, whilst at the same time it deprived it of its fœtor.

"What, however, I consider as of most importance in these cases, and to which perhaps we are alone indebted for a cure, is the demonstration of the possibility of *retarding the circulation for weeks together*, by the use of this

this medicine." p. 484. "I may, I think, without hesitation, affirm, that an early exhibition of the saturated tincture in consumptions, will, *in general*, prove successful; and even when the disease is far advanced, provided the patient has but strength sufficient left to endure a gradual depression of the circulation, a result equally fortunate may be expected. That this can be done, even in circumstances of debility, to an extent adequate to effect a cure, and without either sickness, languor, or loss of appetite, the cases now appended will satisfactorily attest." p. 487.

Equally interesting, and perhaps better founded *in theory*, is the account given by Dr. R. Fowler, in the same '*Collection*,' and on the same subject. To justify our assertion, in the latter respect, we shall cite Dr. Fowler's own words:

"As I had," says this intelligent physician, "frequently seen large doses of the digitalis given by others, and had, myself, still more frequently given it in dropsical cases, without ever observing any of those uncontrollable and dangerous effects which are said to deter many from its use, my mind was perfectly at ease as to its probable effects in phthisis, and the more so, as its power of repressing arterial action, and inducing debility, from which we have most to apprehend in dropsy, was the very quality from which, properly directed, I hoped to derive most advantage here.

"My attention was, indeed, first directed to it, as a remedy likely to be useful in phthisis, by its almost uniform effect of rendering the action of the arteries more slow than natural, at the same time that it appears to excite that of the absorbents. It has long been known, that diseased parts of the body may be removed by depriving them of *all* supply of food from the arteries; and it is now known, that where this cannot with safety be attempted to so full an extent, on account of the intimate connection subsisting between the part to be removed, and such as we wish should remain, that the same effect may be produced by diminishing, to a certain degree, the arterial supply of the part, at the same time that we leave the action of the absorbents in full force. This is the purpose so ably affected by Mr. Hunter's scientific operation for the cure of popliteal aneurism: and I confess that I was not, and that I still am not, without hope, that something analagous to this may be affected by the operation of digitalis on tubercles in the substance of the lungs. But my expectatoins of success had a better foundation than reasoning *a priori*."

From a review of the different cases stated by Dr. Fowler, we find that *four* of his *out*-patients completely recovered from the use of digitalis, and

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five were in a fair way of recovery, when his account was transmitted to the press. Of the second class, namely, the *in-patients* of Dr. Fowler, together with those he attended in private practice, there are not less than *seven* who obtained permanent relief, and *two* whose cases were of a doubtful issue, and *one* only who "was a very intemperate man, and died a victim to his own imprudence."—The formula prescribed by Dr. Fowler, is the following: Folior. digitalis purpureæ recentium unc. ii. coque ex aq. puræ lb. i. ad colaturæ unc. vii. ss. et adde tinct. cardamom. unc. ss. Of this decoction Dr. Fowler generally directed his patients to take half an ounce, twice, thrice, and in a few instances four times in twenty-four hours: and although we do not discover among his patients, many such as, according to Dr. Beddoes's Nosology, might be classed under the *lost cases*, yet the success of the *new remedy** has, upon the whole, exceeded our most sanguine hopes. It is however to be regretted, that we are not yet in possession of any cases, in which the origin and progress of pulmonary consumption is traced with *pathological accuracy*; the peculiar constitution, habit, and temperament of the individual, are duly discriminated; and all the concurrent and accidental circumstances, such as the weather, air, climate, season, temperature, &c. are distinctly recorded.

In justice to the editor of the volume from which we have derived the information imparted to us by Dr. Drake and Dr. Fowler, we shall likewise present our readers with a few extracts from the 'Addition' made to these '*Contributions*,' by Dr. Beddoes himself, without any comment.

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* It is impossible to contemplate the *rationale*, or rather the *modus operandi*, of the digitalis, as stated by the ingenious writers on that subject, without some degree of reluctance. They seem to attribute to this plant, in effect, a peculiar specific action; not as a mere emetic, nor as a stimulant, sedative, &c.; for these effects are produced by a great number and variety of other substances equally powerful and less dangerous in their application. Indeed, it ought to be remembered, that the late celebrated Professor Stoll, of *Vienna*, in his '*Ratio medendi*,' has furnished us with many instances of *incipient phthisis*, and with a few which may not improperly be termed '*lost cases*,' where he almost uniformly prescribed the smallest doses of antim. tartaris, or the sulphur antim. præcipit, so as to produce continued slight nausea, with singular and unequivocal success. As long, therefore, as it remains to be determined, that the digitalis *alone*, and not conjointly with other medicines, has uniformly cured that formidable disorder, pulmonary consumption, in its more advanced stages; and, lastly, that this plant produces effects on the human system different from those of *all other emetics*,—we cannot but suspend our opinion respecting its extraordinary virtues. In the mean time, we beg leave to disavow our belief in *any specifics whatever*, being firmly persuaded, that there exists no substance in nature, which can be considered homogeneous, or even [illegible] in a physiological sense, to the elementary constituents of the human or animal body.

"A good many of the cases," says he, "in which I have hitherto tried it in *effective* doses were *lost cases*, that is, the patients were in the last stage of consumption. I have not yet been fortunate enough to rescue any patient in such a situation; but in most instances there was a great alleviation of symptoms; in none did life appear to be shortened by the medicine; in some, as far as analogy enables me to judge, it was generally protracted. B. 521.

"What is the cause of the difference between my success, and that of my two able correspondents? From Dr. Fowler's statement, it is clear, that it does not lie altogether in the *period of the disease*. I have suspected that at first, when I used the decoction, I prescribed it too largely; yet when I again refer to Dr. Fowler's reports, I am obliged to reject this supposition. In the patient whose expectoration of mucus was stopped by an attack of severe sickness, (a circumstance which inspired me with hopes of eventual success,) the purulent part of the expectoration was diminished at each of the subsequent sicknesses: and the effect of sea-sickness upon many phthisical patients, forbids me to conclude, that the medicine failed from too great severity of its action. P. 533.

"My patients were all slender, delicate, puny, or feeble. They had all been *delicately educated*, in which respect they must have differed widely from *hospital patients*. Now may I not assume (what in an '*Essay on Consumption*,' I shall immediately endeavour to prove, by a copious induction of facts) that almost all the peculiarities in the mode of life, among the more opulent classes, tend to lessen the *contractile power* of the muscular fibre, and certainly not less than the rest, the contractility of the lymphatic vessels? If so, I believe it will be easily allowed, that they will be less within the power of association of motions, as well as of direct stimuli. I have long *believed it* to be a principle of the animal economy, that in weak habits the ordinary or natural connection between different sets of moving fibres (or the irritative associations,) are also weak. In such cases, the stomach may be affected; the heart may be affected: yet the lymphatics of the lungs, which in less feeble or more irritable habits, are excited into action, shall continue inert. The facts which I have related, concerning the two last patients, prove that the stomach was affected in all degrees consistent with safety to life, by the digitalis; and yet, that no adequate excitement of the absorbents was produced. I do not offer this opinion for acceptance, but merely to be compared with *future facts*. When Dr. Fowler favours us with those comments, he gives reason to expect, perhaps he will help us to a better explanation. Few people are better qualified for illustrating th[illegible]e animal economy,

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"In five cases of imminent or incipient consumption, the use of digitalis has either removed the complaint, or by producing the most decided good effect, affords hope of success. P. 536.

"An immediate emulation must be produced by these reports among medical observers. But I will beg leave to suggest to them, that the determination of the powers of digitalis, is not the only, perhaps after what has been already done, not the greatest, object of pursuit. We may presume, that nothing stands alone in nature. And a substance of similar effect on the stomach and arterial system, may lurk among the articles of the materia medica. It may be detected in some of the bitters, given in greater doses than common. It is impossible here, not to think of chamomile, which, in a certain dose, sickens; and of horehound, which is the general domestic remedy in hæmoptysis and bad coughs. These, and other substances given upon the above plan, may exert virtues similar to those of digitalis. Chemical analysis may furnish light here, on which account I am glad Mr. Davy has engaged in the analysis of the digitalis. The discovery of an analogous body would add prodigiously to future success in the treatment of consumption." P. 538.

Dr. Lentin, of Luneberg, a celebrated German physician, has lately published in the "*Commentaries of the Royal Society of Gottingen,*" some remarks on the *caries ossium,* and the cure of that disorder. He considers it to proceed, on the one hand, from the chemical decomposition of the phosphate of lime, produced by the putrefaction of the jelly contained in the bone. In this view, he is of opinion, that the phosphoric acid will be of advantage in this complaint, and his experience seems to confirm that idea. He administers from ten to twenty drops of the acid internally, in a convenient vehicle; externally, one part of the same acid, with seven parts of distilled water. He has remarked, that the peculiar fetid smell of caries, by these means, in a short time disappears, and the cure speedily succeeds. He adds, on the other hand, that patients affected with hæmorrhoidal symptoms, as well as women during menstruation, were rendered somewhat uneasy and irritable by the use of this new remedy.

MEDICAL

MEDICAL AND PHYSICAL
...ELLIGENCE,
(Original and Selected).

...OKE, of Salem, Massachusets, has contrived an easy ...g the *sal aëratus*, or the carbonate of potass, the parti... ...ich, on account of its simplicity and practical advantage, ...unity of laying before our readers.

...is salt, in its most perfect form, dissolve as much of the ...lkali, in boiling rain, or other pure water, as possible; ...hrough paper, pour it into a jar of stone or earthern ware, ...n such a manner that the air may have access to it, but so ...dust or foreign matter. Let it be hung by a cord in a fer... ...cistern for a month or two, in which time a great many ...formed: the superfluous liquor may be poured off, and the ...hat is called Hippocrates' sleeve. This liquor may be again ...more alkali, and a second time exposed to the air in the ...any loss."

...no doubt, is the most perfect mode of preparation, yet the ...ch less troublesome, and perhaps of equal advantage for all ...poses, and has for the most part been employed by Dr. Hol... ...rence to the former:—

...arge wooden box, bore eight or ten holes, half an inch in ...ne side of it, just below the lower edge of the cover, at ...distances all round; bore also as many holes in the circular ...e box, close to the edge of it; then take another box of the ...but of a smaller diameter by half or three quarters of an inch; ...n the larger box, and to keep it steady, thrust three or four ...dges between the two boxes. The design of the outer box is ...revent any dust or dirt from getting into the salt, while the holes ...he fixed air to be freely admitted.

...wo boxes being thus prepared, fill the inner one with the purest ...ar, or any pure fixed vegetable alkali: put its cover on the outer ...ng the inner one uncovered; sling the double box, thus filled, ...ds, and suspend it in a distiller's vat or cistern, while the wash is ...g, a little above the liquor, or in an empty cistern, if it has been ...ed, and still retains the fixed air; let it remain in this situation for ...s or two months, or longer; let it then be taken out, and the salt, ...y saturated with the acid, be exposed to the sun and air to dry.

...e salt thus prepared, does neither effloresce or deliquiesce in the ..., and for all common purposes is, I believe, equal to that prepared by ... It is much more tolerable to the palate, and may be taken in ... the mere alkali; and as it is decompounded by vegetable ... acids, it may be exhibited, instead of the alkali, in perhaps ...e latter is proper, unless the fixed air is judged improper. ... two drachms, or rather more, of this salt, to ... pure water; a large spoonful of this solution, ...od vinegar, or lemon juice, at the instant of

of swallowing it, makes an agreeable dose. But the so mild, that if the prescriber chuses, a spoonful o alone first, and as much vegetable acid immediately u none of the gas will be lost.

"When *acidity* abounds in the *first passages*, a little any bitter infusion, or the dry salt, added to powder peptic powder, is an effectual antacid.

"In *calculous cases* this salt is recommended by wri the celebrated Dr. CULLEN, in his '*Materia Medic* as being an happy expedient, for conveying larger qu the stomach, than it can bear in its natural state."

The *Economical Society of Batavia* propose the f question, and invite the scientific inquirer, of whateve satisfactory answer, viz.—"*Are there any means, hitherto to the purpose of purifying corrupted water so completely, as and smell, without the admixture of any unhealthy or noxi rendering it a clear, refreshing, and wholesome beverage; a particular means?*" Six thousand florins, or about *five hun* offered as a reward for a conclusive answer.

The following are the conditions which ought to be atten petitors for this handsome prize: 1. the process must not be troublesome, nor should it be attended with a great consump that it may be employed at sea, in ships deeply laden, and ex motion; 2. it must be such as can be easily executed by sea conducted in different climates, it must always give the sa ought to produce no pernicious effects, either by corrosion on the coppers in which the mariners prepare their food.

One third of the prize will be due to the inventor, when, cating his secret to the Committee of the Society, he shall have to make repeated experiments, on board of such vessels as th proper; and the remaining two thirds, after they have made ments, on board of several vessels, in different climates, and s vinced by satisfactory accounts, that the means proposed h effectual. The memoirs on this subject are to be directed to J. J. secretary-general to the Batavian Economical Society, at Haarle to the 28th of February, 1800.

In the 'Recueil periodique de la Societé de Medicine de P XXX. we meet with an interesting memoir, by Cit. GOLDSCHMI *utility of factitious mineral waters, and the preference the deserv of the natural springs.* The author submits to the society the exa of the artificial waters manufactured by him, in imitation of those by the hand of nature, in the mineral springs of Seltz, Spa, and Sed grounds on which he maintains the superiority of his artificial com over the natural productions, are as follow: 1st. The season has a able influence on the natural spring-waters, which in any season considerable share of their virtues: 2d. It is proved by chemical that a part of their gas and other constituent parts escape and keeping them for some length of time; and 3d. The solution such a quantity of metallic ingredients, as is p gas and acids capable of dissolving them.

On the other hand, Cit. Goldschmid boldly waters of his manufacture are more efficaci

contain a greater portion of gas, but can also be composed of [illegible]er quantity and quality of salt, or earth, may be judged necessary: [illegible]hey may be prepared at the time they are wanted, they will lose [illegible]t of their virtues. Lastly, they are incomparably more economical [illegible]onvenient to the purchaser, inasmuch as they are stronger, and conse[illegible]ntly do not require to be used in such large and nauseating doses as the [illegible]tural waters; a circumstance which, together with their reduced price, renders them an object worthy the attention of the consumer. In a future Number, we shall present our readers with a more detailed account of these factitious waters.

The following method of *preserving apples from frost,* which is used in North America, as well as in some parts of Germany, we extract from the first Number of Dr. ANDERSON's '*Recreations in Agriculture, &c. &c.*' a periodical work which we have no doubt will be found uncommonly useful to the farmer, the naturalist, and to readers in general. The apples are kept in a small apartment appropriated for that purpose, on the highest floor in the house, immediately beneath the roof, in which no fire is ever lighted, and which is therefore more exposed to the cold than any part of the building: yet it is found, by invariable experience, that if a thin linen cloth be thrown over the apples, before the frost commences, the fruit under it is never injured, however intense the frost may have been. Linen only is used for that purpose, as a covering of woollen cloth has been found ineffectual.

Dr. Anderson also communicates to us, from the Memoirs of the Royal Society of Agriculture in Paris, the following discovery for *preventing the blossoms of fruit trees being damaged by early Spring frosts.* If a rope, (a hempen one he presumes,) be intermixed among the branches of a fruit tree in blossom, and the end of it brought down so as to terminate in a bucket of water; and should a slight frost take place during the night, in that case the tree will not be affected by the frost; but a film of ice of considerable thickness, will be formed on the surface of the bucket, in which the rope's end is immersed; although it often happened that another bucket of water, placed beside it for the sake of experiment, had no ice at all upon it.

The following singular and ingenious method of multiplying the *Fritillaria Regia, Lin.* is described in the second volume of the *Collection of Memoirs and Observations on Botanical and Economical Subjects,* by the late Professor HEDWIG, of Leipzig. When this plant is in full blossom, the flowers, leaves, and upper part of the root must be cut and wrapped in several folds of writing paper, so that it be entirely covered; it is then to be moderately pressed between two boards, and in the course of a few months there will be seen several small roots germinating at the lower extremity of this apparently decayed vegetable body.

Another volume of the *Transactions of the Natural History Society,* at *Copenhagen,* has been lately submitted to the public. It contains a description of several [illegible]jects belonging to the department of Natural History, together with their representations in engravings. Although the work itself is written and printed in the Danish language, the characters and descriptions of the plants [illegible]iformly given in Latin. The whole collection now consists of four volu[illegible]

Professor Knackstaedt, of Petersburgh, who is favourably [illegible] the medical reader, by several useful publications, has lately w[illegible] account of the medicinal properties of the *Enula Helenium*, insert[illegible] last volume of the *Memoirs of the Institute of Petersburg*, and in w[illegible] maintains that this plant given internally, and at the same time appli[illegible] ternally, has proved a remedy of great efficacy in curing the *tinea, itch*, [illegible] other cutaneous diseases.

Dr. Mitchell, of New York, in concluding his letter to Dr. Haworth, of Oxford, on the subject of Medical Geography, some interesting parts of which we have communicated to our readers, p. 254 & seq. of this Number, makes the following curious remarks, concerning the chemico-physical tracts of *old Mayow*.

"That this man (says Dr. Mitchell,) who was a London physician, and a fellow of All-souls college, his brilliant discoveries, and his book which contains an account of them, should all be forgotten, in his own country as well as abroad, within less than one hundred years, so effectually that *Franklin* could never have read his explanation of water spouts, nor *Scheele* his detection of dephlogisticated air, nor *Girtanner* his manner of accounting for muscular action, nor any body else, what he has left on respiration, and on the condition of the unborn fœtus, and unhatched chick—are among the most singular occurrences in the literary history of the eighteenth century."

Cit. Moricheau Beauchamp has lately presented the medical reader with a memoir communicated to the Medical Society of Paris, and inserted in their 'Recueil Periodique,' No, xxviii. It is an account of a *particular affection of the heart*, seen in the dead body of a man, whose disorder was a complicated nasal hæmmorrage, which announced nothing extraordinary in the region of the heart. On opening the body, however, there was found a considerable quantity of blood coagulated in the stomach and the intestines; and the heart was much larger than in that of a person in a state of health. At the posterior and lateral part of the left ventricle was observed a round protuberance supported by a very large pedicle, not unlike the head of a thigh-bone attached to its neck, but of a size about a third part bigger. The heart was of a lively red colour; the pedicle somewhat darker. The pericardium covered the whole, and closely adhered to it, particularly to the convex part, which offered considerable resistance to the touch, and was of a cartilaginous hardness. On making a transverse incision, with some difficulty, a sound was perceived resembling that produced by cutting a cartilage: it exhibited a cavity of the bigness of a common nut, which penetrated the left ventricle, under the mitral valves. The interior part of this tumour presented two kinds of substances: the outermost was greyish; the other appeared not unlike the parenchyma of the heart; being soft in some parts, while in the middle of the opening could be distinguished a bony circle, large enough to admit the fore-finger, Most of the valves of the heart were ossified.

Two eminent German booksellers, have lately advertised, for sale, that magnificent edition of "*Albina Tabulæ Anatomicæ Sceleti & Musculorum*: cum Tab. Aen. Sceleti, xxxiv. & Musculorum xxvi. *Lugduni Batav.* 1747:" in two volumes, large folio. They offer this work at different prices; viz. *eight* and *nine Carolins*, or from eight to nine pounds [illegible]ency; the former reduced price is proposed by Mr. *Koel*, of Wurzburg, who i[illegible]

Jena Gazette, solicits orders for this classical work. Our readers will perhaps recollect, that Professor *Söemmering*, of Mayence, who now resides at Frankfort, has lately published one of the most perfect engravings of a *female skeleton*, purposely designed as a counter-part to Albinis's male skeleton, which wanted the female; and, by the addition of which, that collection is now rendered one of the most splendid and complete anatomical works we possess.

There is at present in the French press, an extensive work on *comparative anatomy*, from the able pen of Cit. *Cuvier*, whose talents for observation, and accuracy in description, leave no doubt that we shall be presented with a performance of superior excellence.

Professor GOETTLING, of Jena, endeavoured to procure an atmospheric air in the driest possible state, by means of caustic alkali. He introduced into this air, under mercury, some crystals of the most concentrated, fuming sulphuric acid, which he had obtained from Saxon vitriol. There were no longer any fumes perceptible in this exsiccated air; hence, as Mr. G. observes, it is probable, that this imperfect vitriolic acid, decomposes the water of the atmosphere, and thus becomes perfect sulphuric acid.

Dr. SCHERER, the chemist of Jena, now of Gotha, has ascertained by repeated experiments, that *Canton's Phosphorus* is not in the least luminous, if it be exposed to the light of the moon.

This Gentleman has also communicated to Professor Tromsdorf, the ingenious remark made by the Privy Counsellor, VON GOETHE, that putrid wood is luminous only when for some time exposed to the influence of the atmosphere. See *Tromsdorf's Journal of Pharmacy*, Vol. III. No. II.

By the late experiments of Dr. JAEGER *, as well as those by the Aulic Counsellor HILDEBRAND †, (who prepared azotic gas with much trouble, by the deflagration of nitre,) and the additional confirmation of Cit. *Van Mons* ‡, it is now certain that *phosphorus is not luminous* in the *purest azotic gas*, as was formerly maintained by Professor Goettling. This phenomenon took place only when a small quantity of oxygen was present in the azote, and continued only during the consumption of the oxygen.

Mr. MARUM, the Dutch chemist, has made some very interesting experiments, on the *temperature of the electric fluid*, and found that a thermometer, placed before the conductor of Tayler's famous machine, rose in a rarefied atmosphere, from 45° to 151½°. He also succeeded in converting several solid bodies, by means of electricity, into elastic fluids.

Dr. [illegible]KER considers it very probable, that the *carbon*, produced in the well-known experiments of Dr. Pearson, and repeated by him with equal success, might have been separated from *phosphorus*, which Dr. Girtanner supposes

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* [illegible]ren's Physical Journal; Vol. II. No. IV. † *Crell's* Annals of Chemistry, for 1796; Vol. I. p. [illegible]5. ‡ *Gren's* Journal; Vol. III. No. III.

supposes to be a compound body, and which in a process of combustion, in the oxygenated muriatic acid acquires, according to Dr. Scherer, a perfectly black colour.

When Professor Helle, placed smoking phosphorus in pure nitrous gas, obtained from copper filings dissolved in the nitric acid, he observed that although the *phosphorus* emitted no vapours, yet it appeared to have undergone *some change*, as a yellow fluid substance was at the same time produced. On adding a small quantity of oxygen, the usual red fumes of the nitric acid were generated, but soon after this a grey-coloured column of vapour descended to the bottom; the consequence of which was, a universal change of colour in the solution, which presented a highly interesting spectacle. See *Gren's Physical Journal;* Vol. III. p. 93.

The *sulphuric acid* has been successfully *desoxygenated,* in the humid way, by means of the sulphuret of potass. Cit. *Van Mons* made this conclusive experiment, and observed that a solution of this salt, after standing for a considerable time on pulverized charcoal, had been changed into a sulphat of potass, (hepar sulphuris,) and disengaged sulphurated hydrogen gas. Here, therefore, the carbon had attracted the acid of the oxygen, and imparted its base, the sulphur, to the alkali. *Ibid.* p. 230.

The same ingenious chemist succeeded in accomplishing a true *combination of the oxygenated muriatic acid* with the ammoniac, without any decomposition of the combining substances having taken place in the experiment. This salt is possessed of the surprising property of detonating in a requisite degree of heat, as well as in the open air, and in all fluids which do not decompose it.

Professor Klaproth discovered the *vegetable alkali* to be likewise a constituent part of *mineral* substances. In the decomposition of the fossil, called *leucit,* he found from twenty to twenty-two parts of potass in the hundred. The Professor promises to furnish us with the analysis of this substance, in the second volume of his work, entitled, "*Contributions to Physical Knowledge,*" in German.

Professor Abilgaart, in a similar manner, found the *potass* completely formed as a constituent part of *animal blood.* For, on treating the blood of horses with the nitric acid, without the aid of fire, he obtained true nitre, by crystallization.

In order to procure the *potass chemically pure,* and free from the sulphuric and nitric acids, Professor Wurzer points out the following process: Let the alkali, separated from tartar by means of combustion, be saturated in distilled vinegar, and the solution afterwards be diluted with distilled water. This clarified solution ought then to be combined, first with the acetate of barytes, and next with the acetate of silver gradually dropped into it, as long as any precipitation takes place. After this the fluid part is to be filtered, and the solid part completely dried by eva[illegible] the humidity; the dry salt is now to be calcined in a silver crucible [illegible] all the vinega[illegible] dissipated. Thus the residuum exhibits a perfectly pu[illegible] vegetable a[illegible]

wh[illegible]

which requires to be dissolved and clarified only in distilled water, to render it fit for all chemical purposes.

According to an account inserted in the third volume, fourth number of the late Professor *Gren's 'Annals of Physic,'* Mr. Fabroni, of Florence, is said to have proved, that alkohol is not essentially necessary to the formation of ether, and that he has prepared a perfect ether without the aid of vinous spirit. On the strength of this fact, Mr. Fabroni proposes to establish a new theory of the formation of ether, which, together with a detailed description of the process, the author has pledged himself to lay before the public.

La Metherie in his 'Observations,' tom. xliii. p. 464, as well as *Gren* in his *Physical Journal*, vol. iii. p. 45. have severally observed that the mineral or fossil alkali is completely formed in the *Salsula Soda Linn.*; a circumstance by which this plant is sufficiently distinguished from all others, while it contains not the least particle of either potass or calcareous earth.

According to a statement of facts contained in *Tromsdorf's 'Journal of Pharmacy,'* vol. iii. p. 45, Mr. Coppens has decomposed sea-salt, by mixing one part of it with four parts of lime, and two parts of sand; making cakes of this mixture, and then allowing the mineral alkali to crystallize spontaneously on the surface of these cakes.

Citizen Guyton Morveau has observed, that the carbonate of barytes dissolved in water impregnated with carbonic acid gas, is the most effectual test, or re-agent, for discovering the presence of the sulphuric acid. It is further asserted, that the muriated mineral alkali is likewise readily decomposed by the application of that test.

In decomposing sal ammoniac, by means of potass, Cit. Van Mons obtained a salt in chrystals of a regular rhomboidal figure and a considerable size. According to the chemical experiments made with it, this is a triple salt, consisting of the muriatic acid which has formed a double neutral compound, partly with the vegetable alkaline salt, and partly with the ammoniac. Hence it may be understood how it happens, that by means of the vegetable alkali, a very small proportion of ammoniac only can be separated from the ammoniacal salt.

Chemists in general, have hitherto paid little attention to the *multiplied combinations of salts*. This subject has lately received some illustration from the experiments of Professor Link: he discovered ammoniacal, magnesian, and sulphurated potass and soda; ferruginous and sulphurated potass; ferruginous sulphates of copper and nickel; sulphates of zink, and ammoniacal sulphate of nickel combined with cobalt.

On distilling sixteen ounces of the sulphat of silex, which had been previously well washed and beat, with four ounces of powdered carbon, in a Waldenburg retort over a strong fire, Professor Lampadius obtained only a small portion of sulphur, but two ounces and a half of a fluid, the smell of which resembled hepatic gas, which was highly inflammable, of a greater specific gravity than water, and besides preserved its fluid state under water in a temperature of 10° of de Luc, or 0 of Fahrenheit. This [illegible], after being exposed for some minutes to the fresh air, was changed [illegible] a true sulphur.

Mr.

Mr. Lampadius on this occasion, proposes the question: "Is sulphur in a perfectly desoxydated state always a fluid? or was it here dissolved in the hydrogen which became dissengaged from the latent portion (*Rückhalt*—remainder) of water in the carbon?"

Dr. RICHTER, the Prussian Chemist has lately published two valuable chemical processes, viz. the preparations of the *crystallized acid of lemons*, from the juice of either fresh or putrid lemons, currants, &c. and the *citrate of iron*; but as the room allotted to this department of our Journal is already preoccupied, we are, for the present, obliged to defer the particulars of these preparations, as well as many other *new, or improved pharmaceutical processes*, which have been lately devised by the ablest chemists in this and other countries.

In the 86th Number of the "Annals de Chemie," we find a very ingenious but rather diffuse, memoir of VON HUMBOLDT, "*on the absorption of oxygen by simple earths, and its influence on the cultivation of the soil*;" a subject so highly interesting, that we hope to gratify our readers with an elaborate abstract from this memoir, early in a future Number of this Journal.

Citizen BAUDELOCQUE read on the 15th of February last, in the Medical Society of Paris, a memoir, communicated to him by Citizen TARBES, officer of health at Toulouse, relative to the Cæsarian Section, and containing inquiries and reflections on several cases in which that operation had been performed. If our limits should admit of it, we propose to give likewise the substance of this instructive paper in a future Number of our Journal.

In the Grand Hospice d'Humanité, the operations for *lethotomy* are now invariably performed with the *lithotomy caché* of Friar *Cosme*. A late German traveller, Dr. *Ayerer*, who has visited all Italy, in which country that operation is practised according to the principles of Hawkins and Cheselden, bestows uncommon praise upon the method of practice of the English surgeons. Professor *Loder*, of Jena, in the first Number of his 'Chirurgical Journal' gives the preference to the instrument used by Hawkins, and next to it he employs those used by *Le Cat*.

Dr. BRADLEY proposes to deliver a summer course of lectures on the *Theory and practice of Medicine*, for the accommodation of such gentlemen as may be prevented, by professional engagements, from attending lectures during the winter.

The first lecture will be delivered on Monday, the 13th of May, at the Lecture-room, No. 21, Great Eastcheap, near the Monument, at six o'clock in the afternoon.—Terms three guineas.

As a circumstance of medical news, we have to notice the retirement of Dr. MATTHEW BAILLIE, as a teacher of anatomy.

To this gentleman, who was his nephew, Dr. William Hunter bequeathed the use of his Museum, for a term of years; and, in consequence of arrangements made soon after Dr. Hunter's death, the anatomical lectures were carried on, since that time, jointly by Dr. Baillie a[illegible] [illegible]hank, in the Theatre built by Dr. Hunter, in Great Windmill-street. Dr. Ba[illegible]

soon established a high reputation as a teacher, for which he was admirably calculated, by having a natural clearness of mind, much improved by habits of arrangement. If he did not equal the talents of his uncle, as an accomplished orator, he possessed all that perspicuity of description, and clearness in demonstration, which are so essential for instructing others. His own view of a subject was always distinct, and he had a happy facility of rendering it so to others. By these talents he supported the reputation of the school, and gained the esteem of his pupils, who have, we understand, conveyed their sentiments of his worth, by presenting him with a handsome piece of plate.

His last lecture, on Thursday, April 11th, consisted of a demonstration of the absorbent system; at the conclusion of which he read a short but neat address to the following effect:

GENTLEMEN,

"I have now finished the part which belonged to me of this course of lectures,—the last which I propose to give. For some time past, my time has been so much occupied by the ordinary duties of my profession, that I have often found it difficult to give the lectures. But I have farther been induced to sacrifice the gratification arising from filling the honourable situation of a public teacher, at this time, from some private circumstances of feeling, which however I cannot very well explain in this place.

"In the course of fifteen years that I have taught anatomy, I have endeavoured faithfully to discharge the duty which I owed to the public, and have much to thank them for the liberal indulgence which I have received; having always found you, Gentlemen, more disposed to overlook my failings, than studious to search them out.

"Lectures on anatomy will continue to be given here by Mr. Cruikshank, my late partner, whose character as a teacher is well known,—and Mr. Wilson, who has for many years superintended the dissecting-room, and has given the best promise of his abilities as a teacher."

Dr. Baillie delivered this address under evident embarrassment, arising from the feeling that it was the last time of his appearing in that situation; a circumstance which, however trifling, is so connected with mortality, that few men can be wholly indifferent to it. He retired amidst the plaudits of his audience. The theatre on this occasion was completely crouded; and he must have felt flattered, by his last lecture being attended by not only students, but by many teachers in the different departments of medicine and surgery, and by surgeons of the first eminence.

Dr. WILLIAM TURTON, author of the Medical Glossary, is about to put in the press a translation of the "*Systema Naturæ*," of Linné, from the last edition, by *Gmelin*. It will be comprised in four large octavo volumes, and will include the later discoveries of societies and naturalists. The English natural productions will be distinguished by an asterisk. Each department will be accompanied with an appropriate introduction, descriptive plates, and an explanation of the Linnéan terms. The first volume, containing the Mammalia, Aves, Amphibia, and Pisces, will be ready for publication some time in the ensuing Autumn.

The great price of Gmelin's edition, and the total exclusion of those, not well acquainted with the Latin language, from consulting the works of the founder of this system, will make this publication an acceptable present to the [illegible]s of natural history, and an useful addition to the stock of English sci[illegible] literature.

The

The day after the first page of this Number was sent to the press, we received a copy of Dr. JENNER's second work, intitled "*Further observations on the variolæ vaccinæ*, or *cow-pox*." 4to. 64 pp. (price 2s. 6d) *London.* Law.

These observations contain additional evidence in favour of Dr. Jenner's original opinion, and some useful cautions respecting the manner of conducting experiments on this disease, of which we shall give an account in our next.

The following is a correct receipt of Mr. FORSYTH's composition for destroying the *new insect on apple-trees*, and of which we again take notice; as in the account given of it in our last Number, p. 201, the necessary ingredient, lime, was accidentally omitted.

Rj. To one hundred gallons of *human urine*, and one bushel of lime, add cow-dung to bring it to the consistence of paint.—If the white efflorescence-like substance, in which the insects are lodged, has made its appearance, it should be previously brushed off.

Cit. DE CANDOLE, of Bourdeaux, has, in a late Number of the 'Bulletin of the Philomatic Society,' published a description of the *Sennebieria pinnatifida* (Lepidium didymum, Linn.). In explanation of this *not descript*, Cit. Tournon, of Paris, in the 'Magasin Encyclopedique' of the 1st Germinal (March 21st), observes that from Candole's statement it would appear to be an exotic plant, but that he had found it, three years ago, behind the mill belonging to the Carthusians of Bourdeaux, near the Medoc road, in a moist soil: he further adds, that neither Linnæus, nor Murray, mention its native soil.

The French National Institute have appointed Citizen OLIVIER to the dignity of a member of the Republican School in the branch of Zoology, in the class of Physical and Mathematical Sciences. The other, less fortunate, competitors were Cit. *Barthez* and *Jurine*.

Among the branches of science proposed to be made the subject of public lectures under the projected *institution for diffusing the knowledge, and facilitating the general introduction of useful mechanical inventions; and for teaching, by courses of philosophical lectures and experiments, the application of science to the common purposes of life*, are the following:

Of heat, and its application to the various purposes of life; of the combustion of inflammable bodies, and the relative quantities of heat producible by the different substances used as fuel; of the principles of the warmth of clothing: of the effects of heat and cold, and of hot and cold winds, on the human body, in sickness and in health; of the effects of breathing vitiated and confined air; of means to render dwelling-houses comfortable and salubrious; of the methods of procuring and preserving ice in summer, and of the best principles of constructing ice-houses; of the means of preserving food in different seasons and climates; of the means of cooling liquors, without the assistance of ice; of vegetation, and of the specific nature of those effects that are produced by manures; of the art of composing manures, and adapting them to the different kinds of soil; of the nature of those changes that are produced on substances used as food in the various processes of cookery: of the nature of those changes which take place in the digestion of food; of the chemical principles of the process of tanning leather, and of the objects that must particularly be had in view, in attempts to improve that most useful art; of the chemical principles of the art of making soap; of the art of bleaching; of the art of dyeing; and, in general, of all the mechanical arts, as they apply to the various branches of manufacture.

CRITICAL

CRITICAL RETROSPECT
OF
MEDICAL AND PHYSICAL LITERATURE.
[FOREIGN AND DOMESTIC].

NATURAL HISTORY AND CHEMISTRY.

Catalogue raisonné des ouvrages, &c.—A critical catalogue of the works which have been published on mineral waters in general, and particularly those of France, &c. By CARRERE, 4to. 400 pp. (10 livres) *Paris.* Remont.

This valuable *monographical* book is divided into four distinct parts; in the first we find a list of works on mineral waters in general, containing the titles together with an analysis of *two hundred* and *fifty-two* publications on that subject;—the second relates to the mineral waters of France in particular, and presents an analytical view of *nine hundred* and *two* works, with an account of *six hundred* and *twenty-seven* springs;—the third gives a succinct list of the minerals springs of France, not before described, and which amount to the almost incredible number of four hundred and forty-seven;—lastly, the fourth section of the book contains tables, stating the temperature of the hot springs of France, compared with that of the atmosphere.

The present is a new edition of a work, which has formerly been received with great approbation by medical men, as well as general readers; it was originally published under the patronage of the ci-devant Royal Society of Medicine, in consequence of a favourable report made of it, by the late celebrated Vic. d'Azyr.

ANATOMY AND PHYSIOLOGY.

Petri Camperi, summi medici, Dissertationes decem, quibus ab illustribus Europæ, præcipue Galliæ academiis palma adjudicata. Accedunt ejusdem *de optima agendi vel expectandi in medicini ratione* liber singularis et dissertatio *de forcipum indole et actione.* Cum tabulis in aere expressis. Vol. I. 1798. 8vo. pp. xiv. and 562. *Lingæ.* Julicher.

The editor of this respectable collection is Mr. J. F. M. HERBELL, who is already known as a judicious and accurate compiler, by the edition he has published of the smaller tracts of the celebrated CAMPER, an author, whose great merit in medical science, but particularly in surgery, anatomy, and physiology, are so universally acknowledged, that it is unnecessary to enlarge upon them. We shall, therefore, content ourselves with particularizing the subject of each treatise contained in the first volume: 1. *De Infantum regimine,* written in 1762, and printed in *Tom.* VI. *Actor. Societatis Doctrinar. Hollandicæ.*—II. *De emolumentis et optima methodo insitionis variolarum;* written in 1772, and first published at Groningen in 1778, with two engravings, exhibiting the gradual changes of the pustules after the inoculation of the small-pox; a treatise which, at the present time, is peculiarly valuable.—III. *De incommodis ab unguentorum abusu oriundis, et de eorum emendationibus in ulcerum curatione;* written in 1773, and printed in the fourth volume of the "*Memoires de l'Academie Royale de Chirurgie de Paris,*" in 1779.—IV. *De theoria et curatione morborum chronicorum pulmonum,* written in 1775, and never before printed. This treatise abounds in useful remarks and observations, relative to the morbid appearances noticed after

dissection.—V. *Sur les Influences*, &c. *i. e.* "On the influence which the air, by its different qualities, might display in chirurgical maladies; and on the means of treating them with success;" written in 1775, and now first printed.—In this essay, the learned author endeavours to prove, that the constitution of the atmosphere has no immediate influence on wounds and ulcers; that a great degree of heat or cold, alone, more sensibly affect them; and that it is only from the general state or predisposition of the body, that a wound will suffer unfavourable changes through the inspiration of bad or corrupted air. VII. *De vera et præcipua causa morborum, inter pecora et armenta epidemice, seu epizootice, grassantium*; written in 1777.

Die trocknen Knochen, &c.—"*A Description of the bones of the human body, in a dry state; for the use of his pupils, and those who practise Anatomy at the Anatomical Theatre of Berlin*: By Dr. J. G. WALTER, &c. fourth Edition, improved. 8vo. 412 pp. with plates. *Berlin.* Lange.

It must be ascribed, in a great measure, to the number of students who frequent this institution at Berlin, and particularly all the natives who propose to establish themselves in the Prussian dominions, that this book has survived a *fourth* edition. Although the descriptions are, upon the whole, tolerably accurate, yet the style of the author is uncommonly fatiguing, and his language frequently incorrect.

Traité de Miologie, &c.—"*A Treatise on Myology, according to the Method of Desault*;" By HYACINTHE GAVARD, his pupil. 8vo. 398 pp. 1798. (4 livres) *Paris.* Méquignon, sen. and the author.

This valuable treatise professedly owes its origin to the lectures of the late celebrated *Desault*, which M. Gavard diligently attended and carefully transcribed.—The red or reddish colour, however, should not have entered into the definition of a muscle (pag. 1); for, in the human body, this is by no means a necessary property of the muscular fibre; and p. 17, the author again contradicts himself, when he says, that the red colour is not essentially present in the fibres of a muscle. He distinguishes with more propriety, between *simple* and *compound* muscles: in the former, the fibres lie only in one direction; while, in the latter, they intersect each other, and are variously interwoven one with another. With respect to the tendons, page 23, we agree with him, that in the dead body they are more pliable than the muscular fibres; but that the reverse is the case in the living subject. Among the properties inherent in muscles, the author reckons elasticity, contractility—which he calls the '*dead power*,'—sensibility, and irritability. The muscular fibre may indeed be extended, but does not again contract with equal force; the contrary is observable in the tendinous fibre.—The muscules possess but a small degree of sensibility. *Harweg* adduces an instance of necrosis, where the heart was laid bare: upon touching it, its motions became more violent, but the patient felt no pain. In treating of muscular irritability, the author observes, that the heart of a viper, after having separated from it all the viscera for six hours, still manifested the power of contraction. In dissecting various living animals, he never observed a change of colour during the contraction of a muscle.

In describing the individual muscles, at considerable length, the author has followed that method by which they can be displayed to the greatest advantage, in anatomical preparations. Each muscle he first considers according to its superior and inferior surface, and according to its sides, then he describes the tendon, and lastly, points out the effects of both.

Want of room does not permit us to state the peculiarities and devia-

of the author from other anatomists: we shall therefore only add, that in general he coincides in opinion with the celebrated *Sömmering*, and that this work, as may be expected from an ingenious pupil of Desault, is replete with sound and original remarks, on account of which it may justly be ranked among the classical books on the subject.

Description anatomique d'une tête humaine extraordinaire, &c.—*An anatomical Description of an extraordinary human Scull; with an Essay on the origin of the Nerves:* By J. F. N. JADELOT, 8vo. with two plates. (1 livre.) *Paris.*

The object of this description, a human scull of an uncomman size, was found in the village of Saiy, near Rheims, about five feet from the surface of the ground, and is now preserved in the valuable collection of Cit. Jussieu. The author gives an account of its weight, dimensions, and figure, compared with those of the ordinary head of adults; and likewise furnishes us with a chemical analysis of its substance, compared with that of other human bones. In his opinion, this singular scull affords proof of a disease, before unknown, originating from a softness of the bone *(molities ossis)*, accompanied with an enormous, but apparently systematic and regular swelling. He further conjectures, that the phosphate of lime must have influenced the effect of the disease, so as to check its progress, while the carbonate of lime could not have increased till after the death of the subject.

PHARMACY AND MATERIA MEDICA.

Dictionario elemental de Farmacia, &c.—"*An Elementary Dictionary of Pharmacy; or the Application of the Principles of modern Chemistry to the chief operations of Pharmacy; with an extensive new Nomenclature, and a complete Table of Contents:* By DON MANUEL HERNANDES DE GREGORIO, Apothecary to the King. 2 volumes, small 4to. 300 pp. each. *Madrid.*

It is with much satisfaction we observe the attention and success, with which the Spaniards cultivate the different branches of medical and physical science. The present work is commendable not only for conciseness, but likewise for a satisfactory account of the most important particulars relative to this department of physic.

The explanatory introduction is well written; the author's definition of pharmacy and its relation to medicine is accurate; his distinction between simple and compound bodies is correct, as well as his specification of their different genera, and the elementary view of the three kingdoms of nature.

In the Pharmaceutical Dictionary the different articles are well arranged, and clearly defined; a proof that the author is conversant with modern discoveries. Under the term 'Vegetables,' he treats of the philosophy of botany, and describes the usual plants, by the distinction of officinal and botanical. The whole is concluded with a synomical view of the old and new chemical nomenclature.

Traité des propriétés, usages, et effets de la Douce amère, &c.—"*A Treatise on the Properties, Uses, and Effects of the Solanum scandens, in the treatment of Ringworm or Tetters:*" By CIT. CARRERE. 8vo. (3 livres.) *Paris.* Moutardier.

This work has been sanctioned by a most flattering report made by C. C. GEOFFRY and AUDREY, a committee appointed by the medical Society

Society of Paris. It is, according to French ideas of Therapeutics, a valuable accession to the observations already published by the author, on this species of night-shade.

Des Caractères, du Traitement et de la Cure des Dartres, &c.—" *On the Nature, Treatment, and Cure of Ring-worms or Tetters; Palsy of the lower Extremities; Convulsions; the Hooping Cough; Epilepsy; Tetanus, &c. by the use of the Rhus radicans, &c.* By A. DUFRESNOY, 8vo. (3 livres.) *Paris.* Méquignon.

Although this publication belong more properly to the following head than to the present, as its subject is rather of a therapeutical than pharmaceutical complexion; yet, as the preceding work is principally written on the same subject, although we are no advocates for the introduction of *empirical practice*, (or what tends to the same disgraceful end—the encouragement of *specifics*), in justice, however, to the author of this volume, we shall repeat what he has himself asserted, that after a great number of experiments made in the course of *ten years*, with the *rhus radicans*, and a species of narcissus, which he terms *narcisse de prés*, he has been able to perform a variety of cures in the diseases enumerated in the title page, by preparations made of these two plants, which have hitherto been little known or employed as medicines.

PRACTICE OF MEDICINE AND SURGERY.

Medicinæ Praxeos, Compendium: symptomata, causas, diagnosin, prognosin, et medendi rationem exhibens. Auctore, EDVARDO GOODMAN CLARKE, *M. D.* Collegii Regalis Medicorum Londinensis, nec non Exercitûs Medico. *Londini.* In ædibus auctoris et apud bibliopolarum tabernas habendum. 1799. 214. pp. 12mo.—(Price Five Shillings sewed.)

In a short preface the author informs us, that he has composed this abridgment with the greatest attention, and arranged it chiefly according to the methodical nosology of Cullen. Indeed, it may well serve as a safe guide to the student, and occasionally to the young practitioner; as it affords a concise and perspicuous view of the principal diseases, together with the general indications of cure.

Medical Strictures; being a concise and effectual method of curing the following Diseases: Colds, Ague, Small-pox, Measles, &c. &c. By RICHARD CLARKE, M. D. 8vo. *London.* Rider. (Price One Shilling.)

This contemptible publication would deserve no notice, in our Journal, were it not for the sake of warning the reader against every species of delusion which is practised by ignorant pretenders, under the shield of scientific semblance. The whole of these '*Strictures*' is the effusion of quackery; for under the pretence of treating and describing about *twenty-three* of the most common disorders, the industrious author renders his pamphlet the vehicle of advertising *thirty-one* different quack medicines—and *these*, according to the title pages, are "*the means of prevention, palliation, and cure, distinctly pointed out; and the whole adapted to general comprehension!*"

Reflections on the propriety of performing the Cæsarean Operation: to which are added, Observations on Cancer; and experiments on the supposed origin of the

the Cow-pox. By W. Simmons, Member of the Corporation of Surgeons in London, and Senior Surgeon to the Manchester Infirmary. *London.* Vernor and Hood.

In this interesting treatise the author first premises a concise but satisfactory historical account of the Cæsarean operation, and after duly balancing the arguments for and against that fatal section, which has been performed *eleven times* in this kingdom, and has proved mortal *in every instance**, he concludes this part of his ingenious 'Reflections' with the following decisive opinion on the subject:

"Upon the whole, then," Says Mr. Simmons, "in that supposed case of distortion (which I hope will never happen) in which the mother must be doomed to death, from the impossibility of delivering the child by the crotchet, the compound operation I have recommended will furnish a resource, approved by reason and sanctified by experience; inasmuch as the section of the symphysis pubis has been made, and the crotchet has been used though separately, yet with safety. Such a case will be attended, unquestionably with additional hazard; but it offers the only chance to the mother, to the preservation of whose life our chief care should be directed: and, I hope, that in future *all trace of the Cæsarean operation will be banished from professional books*; for it can never be justifiable during the parent's life, and stands recorded only to disgrace the art."

In his practical "*observations on cancer*," Mr. Simmons informs us, that he has prescribed a solution of arsenic, with singular advantage, in a case of confirmed cancer, by directing fifteen drops to be taken three times a-day; leaving it off for a few days, on account of an alarming general indisposition; and, when these threatening symptoms had subsided, returning to the former dose.

The author concludes with an account of some *experiments on the supposed origin of the cow-pox*; the result of these we extract in the following passages: "The limitation of the contagious power of the fluid supposed to occasion the cow-pox, and obtained from the horse's heel, to the first or erysipelatous stage of the grease, disproves the identity; and also destroys any analogy that might have been conceived to subsist between it and variolous matter.

"Twelve punctures were made in the teats of three cows, inoculated with the *ichorous* fluid, and it did not produce the smallest effect in either of them: six children were inoculated with the same sort of fluid, by making four punctures in the left arm of each, and no disease whatever ensued: eight punctures were made in the teats of two cows, and variolous matter was inserted; but not the smallest change took place; one single puncture, with diluted variolous matter, gave the small-pox to a child.

"The evidence, therefore, is as *one* to *twenty-four*, in the human subject, between variolous matter, and the discharge from the horse's heel; as *one* to *twelve* in cows; and between the insertion of variolous matter in man, and in cows, as *one* to *eight*.

"These experiments prove, first; that the cow-pox poison does not originate in the horse's heel; secondly, that the cows will not take the small-pox."

Manuel de la saignée, &c. *An Epitome of the Practice of Phlebotomy; or a Dialogue on that Operation.*—By Roch Tarbes. 12mo. (2 livres.) *Paris* Cullebois.

This

* Osborn's Essays on Midwifery, p. 440.—Since the publication of this work several other cases have occurred, in which the Cæsarean operation is said to have been attended with the same fatal event: vide Mr. Simmons's Reflections. p. 28.

This little volume comprises the most useful information on the subject here treated; it is written in a manner lively and perspicuous, so that it cannot fail to be of some utility, especially to the young practitioner.

POPULAR OR DOMESTIC MEDICINE.

Medical Admonitions addressed to Families, respecting the Practice of Domestic Medicine, and the Preservation of Health, &c. by James PARKINSON. 2 vols. together 500 pp. 8vo. 9s. *London.* Dilly.

We have perused the above book with uncommon satisfaction and regret. Satisfaction with the design and subject of the work, as well as the manner in which it is executed: regret that it was not published many years ago. There are, perhaps, very few so sanguine as to expect that quackery can be prevented; though all are convinced that it destroys more in this island than the sword, famine, and pestilence united. To diminish the number of its victims is the object of the work before us. The author gives the following account of his design, in the beginning of the first volume: "My dear friend, I comply with the utmost willingness, with your request, to supply you with such information as may prevent you, on the one hand from unnecessarily incurring the expence of medical attendance in the various trifling ails to which you and your family may be subjected; and on the other, from sacrificing a friend, or perhaps a beloved child, by delay or improper interference, in some insidious disease."

(To be continued in our next Number.)

Traité de l'education corporelle des Enfans, &c. A Treatise on the Physical Education of Children; or Practical Reflections on the Means of obtaining a Bodily Constitution most suitable to Republicans: By J. C. DESSESSARTZ, Physician, Member of the National Institute, &c. The second edition enlarged with a Preface and Supplement, viith year. 8vo. pp. 514. (5 livres sewed.) *Paris.* Barrois.

Although the first edition of this work was published no less than thirty-three years ago, (1766), it has not become so extensively known as it well deserves. The supplement, which was not in the former edition, contains excellent precepts for mothers who wish to suckle their own children; a curious and well-selected catalogue of books on physical education; and lastly, what no book ought to want, a good index.

Essai sur les malades phsyiques & morales des femmes: An Essay on the Physical and Moral diseases of Women. By B. LAFFECTEUR. 8vo. (1 liv.) *Paris.*

The author, in this small volume endeavours to include all the usual maladies incident to females, in the different ranks and periods of life, as well as the political evils to which the sex are subject in society. Upon the whole, the treatise before us possesses considerable merit; for, besides explaining the nature of the most common female disorders, Cit. Laffecteur ably comments upon the influence of the passions over the physical constitution of women, and forcibly inculcates the necessity of regulating the former for the benefit of the latter. He justly observes, that no one comes in a state of disease from the hands of nature; and that all disorders of the human body are more or less the consequences of the infraction of her laws; hence he draws the necessary inference, that the principal attention ought to be paid to air, climate, clothing, food, and other particulars of diet and regimen.

NEW PUBLICATIONS IN APRIL.

Medicina Nautica: An Essay on the Diseases of Seamen; with communications by American Physicians on the New Doctrine of Contagion and Yellow Fever. By THOMAS TROTTER, M. D. Vol. II. *London.* Price 7s. 6d. Longman and Rees.

Ten Minutes Advice to the Afflicted in Nervous Disorders, by a Student in Medicine. *London.* Price 6d. Rivingtons.

(The new Foreign Publications in our next Number.)

TO CORRESPONDENTS.

WE think it a duty incumbent upon us to acknowledge the favour of many communications we have received from our friends, as well as anonymous correspondents: but while we mention this flattering encouragement with peculiar gratitude and satisfaction, we cannot help observing, that several papers signed merely with initial letters—in answer to others accompanied with the signatures of their authors—have been transmitted to us for insertion. As it would evince a degree of injustice to admit such articles, especially on *controversial subjects,* we hope, that this will be considered a sufficient apology for their not appearing.—And as the names of places and persons, if written in a slight and imperfect manner, give frequent occasion to mistakes and errors of the press, our correspondents are particularly requested to write their names, as well as designations, *distinctly,* and *without abbreviations.*

There is another circumstance which we cannot pass over in silence: it relates to communications sent by empirics, with a view either to extol their medicines, or recommend their pamphlets—both are inconsistent with our professions, and the duties we owe to the public. Indeed, it has not entered into *our* plan, to circulate the prospectus of this Journal among the proprietors and venders of Nostrums; hence we shall, upon this occasion, only observe—"*Quod* MEDICORUM *est, promittunt* MEDICI:"—*sed non omnes, qui* VERAM *promittunt* VERAM MEDICINAM *colunt.*

Lastly, it being always desirable, that communications on *practical subjects* be laid before the public as soon as possible, we again request our correspondents to favour us with such articles *before the* 15*th of the month;* as otherwise, from our inability to insert them, both they and our readers must inevitably be disappointed.

TO

TO THE PUBLIC.

THE Proprietor of the MEDICAL AND PHYSICAL JOURNAL feels it his duty gratefully to acknowledge the liberal patronage with which the work has hitherto been honoured. It affords him, at the same time, the highest satisfaction to learn, that the plan and execution meet with the general approbation of the Faculty. The friends of the undertaking will doubtless be gratified to learn, that the sale of the two first numbers has already considerably exceeded that of any Medical Journal hitherto published in this country.

The great variety of valuable and original communications, authenticated by the respectable signatures of the writers, evinces, in the most unequivocal and flattering manner, the approbation and preference of the most intelligent of the Faculty. Testimonials so honourable and satisfactory, place beyond a doubt the complete and permanent establishment of the work.

The Proprietor cannot refrain, in justice to his own interest, and in confirmation of the preceding remarks, to subjoin copies of letters, with which he has been honoured from the three principal Medical Societies in the metropolis.

To Mr. PHILLIPS.

SIR,

I am requested by the unanimous vote of the Physical Society, to return you their sincere thanks for the first and second numbers of the Medical Journal, which with much pleasure they add to their library.

I remain, Sir,
Your very humble Servant,

Medical Theatre, Guy's Hospital, GEORGE JOHNSON, *Secretary.*
April 13, 1799.

To Mr. PHILLIPS.

SIR,

I am desired by the Lyceum Medicum Londinense, to return their thanks to you, for presenting them with the Medical and Physical Journal.

I am, Sir,
Your's, &c.

Lyceum Medicum Londinense, J. CRUKE, *Register.*
April 16, 1799.

To Mr. PHILLIPS.

SIR,

The Presidents and Members of this Society voted you their unanimous thanks on the 9th inst. and ordered me to transmit the same by letter, for your liberal donation of the Medical and Physical Journal, which they had previously resolved to purchase.

I am, Sir,
Your obedient Servant,

CORNWALLIS HUNT, *Secretary.*

Medical Society, St. Bartholomew's Hospital,
April 25, 1799.

D. Gundee, Printer, Ivy-lane.